Allison K. Sullivan – Contribution to Diversity, Equity, and Inclusion

I believe in the diversity bonus: groups improve their performance by tapping the power of differences in how people think. The first and fundamental step to reaping these benefits is enabling and supporting students in underrepresented groups. My experience speaks to this priority.

An Early Commitment to Outreach

As an undergraduate student, I had the opportunity to be an instructor for "Comet Camps" – an engineering outreach program at The University of Texas at Dallas (UTD). The program exposed participants to different engineering fields through the lens of Lego Mindstorm robots. I participated in two different versions of this outreach effort. First, we worked with Dallas' Museum of Nature and Science to offer the camp to 2nd and 3rd grade students. The students were fearless. They dived into building and coding new features for their robots and actively pushed the boundaries with their creativity. Studies show early exposure gives students more time to develop hobbies and seek educational opportunities that prepare them for success in STEM-related majors. This experience demonstrated to me how this process can work in concrete terms. As a result, I've continued to support early outreach efforts over the years.

Second, we worked with the Dallas' Boys and Girls Club to offer the camp to female juniors and seniors. These students often attend underserved k-12 public schools, which do not offer computer science courses. Therefore, for most of the participants, our camp was the first time they got any hands on exposure to STEM fields. At the start, almost all of the participants viewed STEM majors as unattainable and did not feel confident in the activities. I strove to foster a positive connection between students and STEM topics and to enable those participants who expressed a deeper interest. For the latter, I gave students extra assignments and helped them register for UTD camps that covered a broader depth.

UTD's comet camps helped me discover my passion for outreach activities. In graduate school, I made time to support or participate in outreach efforts whenever I could. I was the Graduate Relations officer for the Women in Electrical and Computer Engineering club and I frequently volunteered at Engineering Saturdays at the Thinkery and Girl Days events.

Paying it Forward: My Time at NC A&T

North Carolina Agricultural and Technical State University (NC A&T) is a historically black college. Within our college of engineering, 78.7% of our undergraduate students are from underrepresented minority backgrounds. Therefore, the past year working as a professor has been rich with opportunities to serve these groups.

Supporting Student Competitions

Having an advisor or coach who is fully engages makes a difference in student competition teams. In my first year, I had several opportunities to serve this role. All students involved are from underrepresented minority backgrounds.

- **The SAE International and General Motors co-sponsored Autodrive Challenge.** I mentor 2 undergraduate and 5 graduate students working on developing a self driving car. Our team placed 2nd overall in the year 2 compeition.
- **AMIE Design Challenge.** I coached the 2nd Annual AMIE Design Challenge competition team. The challenge was held at the 2019 Black Engineer of the Year Award Conference (BEYA 2019). The team of 6 undergraduates placed 4th.
- **Triad Programming Contest.** I co-organized the Triad Programming Contest on campus which brings together teams from local highschool and colleges. Greensboro, the home of NC A&T, has a large African American demographic and all participating schools were minority serving institutions.
- **Black Enterprise Hackathon.** I coached the 2019 Black Enterprise Hackathon team, which placed first.

Open Office Door Policy

Keeping my office door open as long as I am not on a call is a simple but valuable thing to provide to my students. I walked into NC A&T as a recent graduate, ready to share my stories and lessons learned with any student who asked. I assumed I would be helping undergraduate students decide between industry and graduate school or helping graduate students decide between industry and academia. However, I found

myself spending far more time counseling female students. Most of the female students at NC A&T actually face a double burden: they are both a gender and ethnic minority, each of which carries distinct pressures and stereotypes. Sometimes, my role was to just listen to their issues. Other times, I pushed them towards different organizations built for women engineers, so they could start building the community of support around themselves that I have found to be essential.

Grace Hopper Celebration

I attended the 2019 Grace Hopper Celebration (GHC) as a Faculty Scholar. It was my first time attending GHC. I never knew about the Grace Hopper Celebration until I was in graduate school and my school's Society of Women Engineers chapter hosted a GHC scholarship competition. When I became a professor at NC A&T, I discovered the school did not send students to GHC. Not unsurprisingly, I also discovered that most students did not know about the conference. From my open door policy, I knew how many females engineering students at our school feel a heavy burden for being both a female and an ethnic minority. Leading into the 2019 Grace Hopper Celebration, I had our department's administrative assistant send out emails promoting the different corporate GHC scholarships. As a result, I was able to bring 5 NC A&T students: 1 as an official Student Scholar and 4 from corporate scholarships.

The big goal outlined in the 2019 GHC keystone is 50/50 representation by 2025. I have been thrilled to do my part to contribute to this goal, and intend to continue to support this ambitious effort.