



*Engineering Education
Transformations Institute*
UNIVERSITY OF GEORGIA

Responding to the COVID-19 crisis

Making a **Change** through your Stories

Take 10 minutes (or less) to share your personal experience [here](#)

Interim brief 1: April 10-19, 2020



#EngineeringExperience

#UGAQuarantales

Click [here](#) to tell your story <https://tinyurl.com/UGAQuarantales>

Be heard. Tell your story. Make a change.

This interim brief is the first product of a long-term study to understand and improve the College of Engineering's response to the COVID-19 Crisis.

Are you a student, faculty, or staff member in the College of Engineering at UGA? Tell us how you are experiencing the COVID-19 crisis and/or transition to online learning. Your stories will help the College better respond to your needs. To participate, click [here](#).



If you have any questions about this research, please email Dr. Nicola Sochacka sochacka@uga.edu.



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Executive Summary

Our research findings so far can be summarized in three major takeaways.

1

Faculty and staff are adapting well to the crisis

The majority of faculty and staff stories were positive in nature. They have largely risen to challenges of the crisis, celebrating creative solutions and small victories.

2

Students are struggling to reclaim their sense of agency

The majority of undergraduate student responses were negative and expressed feeling ill-prepared for the online transition. They've had little success in finding solutions to the new academic challenges they face.

3

Re-establishing a sense of connectedness is the greatest need right now

Social distancing caused participants to lose many of the social support and feedback structures crucial to their academic success. Undergraduate students in particular are suffering from this loss.

In response to these takeaways, we recommend the College take the following actions. We recognize that the end of the semester is fast approaching. Some of the suggestions could be considered for this semester; while others may be more appropriate for the future.

1. Encourage instructors to incorporate more interactive, synchronous components in their courses.

While UGA's push for asynchronous learning may have helped students logistically to access coursework, an unexpected result is that most undergraduate student participants did not feel they were getting the support they need to succeed academically, from either their instructors or their peers. Many students lost contact with their study groups after moving from Athens. The result has been a loss of motivation and morale. Instructors can help make sure students continue to connect with the instructor and their peers.

- 💡 **Idea:** Incentivize students to attend synchronous office hours or Q&A sessions regularly.
- Idea:** Incorporate more collaborative work. Assign students to study, project, or homework groups, and require them to submit evidence of meeting or working together regularly.
- 💡 **Idea:** Create a channel for your class in a popular social messaging app (GroupMe, WhatsApp, Slack) where students can chat less formally.

2. Ensure that instructors and advisors have access to resources to help students cope with the COVID-19 crisis.

Students are going through a lot more right now than just a shift to online learning. In addition to learning to engage with their classes from a distance, many have lost access to their social support and friend groups, students who anticipated finding summer and fall jobs now find the job market uncertain, and their semesterly routines have been starkly interrupted. All of this adds up to a psychological burden that can lead to a loss of agency and sense of helplessness in the face of myriad challenges. Instructors and advisors can take steps to help students regain a sense of control.

- **Resource:** [Managing Anxiety and Stress During the COVID-19 Situation](#) - Tips from Montana Tech for managing anxiety both in and outside online classes.
- **Resource:** [How to Be Successful in Online Classes During COVID-19](#) - Advice for online course success during the current crisis from DeVry University.
- **Resource:** [10 Ways to Help Your Students Cope with the Transition to Virtual Learning](#) - Advice for instructors from Harvard on how to help students cope with the current crisis through their actions and course design.

3. Shift the College's instructional focus from difficulty to compassion.

Much of the conversation among faculty around transitioning courses online has been about how to ensure that instruction and assessment is in place that will allow courses to continue with the same amount of rigor students would expect in face-to-face learning. However, for reasons explained in the recommendations above, students are going through a lot right now and many do not feel sufficiently equipped to succeed in their courses online. Now is the time to help students find their feet, not to make their lives more stressful. There are ways to make courses less stressful without sacrificing expectations for learning.

- 💡 **Idea:** Consider assessment approaches that don't involve time pressure.
 - Many instructors consider traditional timed exams to be the golden standard of assessment in engineering, but there are many other viable approaches to assessment that can be just as useful (or more so) in an online learning environment. Many of these approaches eliminate the stress associated with strictly timed exams, while still being effective for evaluating key learning outcomes.
 - **Resource:** [Remote Exams and Assessments for Quantitative Courses](#) - Tips for designing quantitatively focused assessments in online environments, including 10 alternative assessments to exams.

Idea: Leverage instantaneous feedback to allow students multiple assessment attempts.

- Using eLC quizzes for assessment allows eLC to grade student submissions automatically, letting students know how well they did as soon as they submit their attempt. Allowing dissatisfied students to attempt a quiz multiple times can both reduce the stress associated with high-stakes exams and facilitate learning as students reconsider their answers from previous attempts.
- 💡 **Idea:** Incorporate intentional ways to collect and respond to feedback from students.
 - Some student participants indicated that they feel they are being left behind as their courses move forward—especially in fully asynchronous courses. Ask students how the course is going (through face-to-face chats, surveys, or other methods), request tips for what could be done to help, and be ready to respond to that feedback.

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Introduction

The COVID-19 pandemic has had a sudden and significant impact on almost all aspects of daily life in the United States. In the College of Engineering at UGA, faculty, staff, and students have had limited time to adapt to the new normal of online learning, all the while observing increasingly stringent shelter in place ordinances and coping with the stress that comes with a worldwide health crisis.

The purpose of this research project is to investigate how the pandemic is impacting the lives of the engineering community at UGA.

A survey that puts the power of interpretation in your hands

This research project uses an innovative approach to gathering data that differs from traditional surveys you may be used to. First, we ask you to share an experience. Then we ask short follow-up questions about that experience and about yourself. These questions enable you (and not researchers) to interpret the significance of your story.

What we will do with your stories

Your stories will be used to help the College respond to challenges in real time.

Individual stories will be grouped with others to identify patterns and “weak signals” (i.e., early signs of challenges or opportunities) in our college. We will reach out to different groups in the college to discuss potential solutions to the problems we identify and ways to amplify positive developments. We will work with the Dean’s Office and School Chairs to implement these ideas. We will share the findings from this study with all students, faculty, and staff in a series of interim briefs, like this one.

Who we are

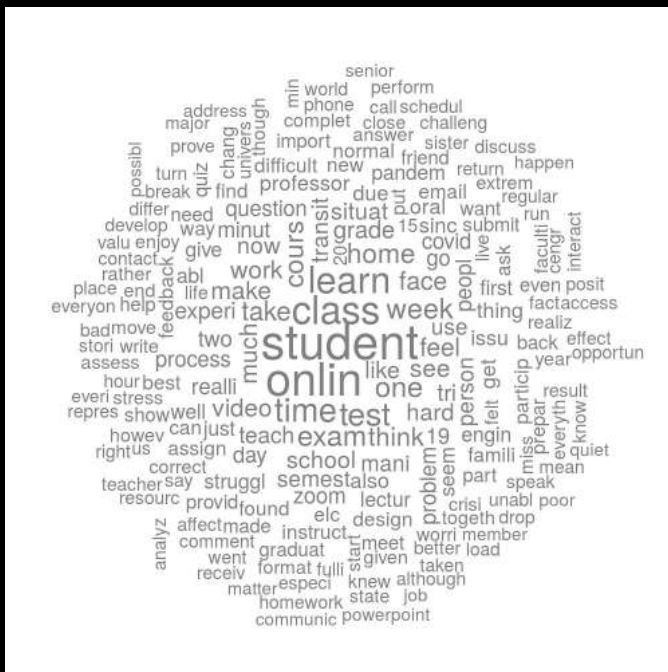
We are a team of four faculty researchers and four undergraduate students. Drs. Nicola Sochacka, John Morelock, Racheida Lewis, and Joachim Walther are members of the Engineering Education Transformations Institute (EETI) - a unit in our College that works to build community around engineering education research and practice. Christian Culloty, Jacob Hopkins, Shweta Vedanarayanan, and Kaosi Ofunne are undergraduate research

assistants who played a central role in developing the survey for this project and who are leading parts of the data collection, analysis, and reporting. The following EETI-affiliated faculty offered valuable feedback on the design of this study and presentation of the findings: Drs. Nathaniel Hunsu, Dominik May, Beshoy Morkos and Cheryl Gomillion in the College of Engineering, and Dr. Andrew Jackson in the College of Education.

This interim brief

Data collection for this study began on April 10, 2020, and will continue until 1-month after the return to face-to-face classes. This interim brief summarizes the findings from the first 10 days of data collection (April 10-19).

We would like to thank those students, faculty, and staff who have already contributed a story. We invite all members of the college to share how they are experiencing these difficult times. Please feel free to tell several stories - this survey will be open until 1-month after the return to face-to-face classes. Your stories will help us understand the challenges you are facing and the opportunities we need to take advantage of.



A word cloud representation of the 23 stories collected from CENGR students, faculty, and staff from April 10-19, 2020.

Overview of Key Findings

The three takeaways presented at the beginning of this report are based on the following key findings.













- A total of 23 stories were collected from April 10-19, 2020 (faculty = 11, staff = 2, undergraduate students = 8, graduate students = 2).
- The majority of the faculty and staff responses were positive.
- The majority of the student responses were negative.
- The majority of faculty and staff indicated that “People in positions of power” are praising them; while the majority of students indicated that people in power are acting with indifference and/or a lack of respect.
- All three “Extremely Positive” experiences collected to date were associated with “A Sense of Purpose” and “Feedback from Others.”
- Stories involving a heavy preference toward “Grit and Perseverance” or “Planning and Efficiency” were more likely to be negative than those demonstrating a preference toward “Willingness to Experiment.”
- Faculty, staff, and students described difficulties with working from home.
- Some members of our community have friends or relatives that have COVID-19.
- Some of the stories point to opportunities for the college to take the lessons-learned during the COVID-19 crisis to better serve more diverse populations in the future.

These key findings are elaborated on in the following pages.

We emphasize that these preliminary insights are based on 23 responses. As we continue with the data collection, more stories will enable us to track how these patterns are developing. At the time of finalizing this brief (on April 22), the story count is at 36. Stories told after April 19 will be reported on in the next brief.

Emotional tone of the stories

The majority of the faculty and staff responses were positive. The majority of the student responses were negative.

	Undergraduate	Graduate	Staff	Faculty
Extremely Positive				
Positive				
Neutral				
Negative				
Extremely Negative				

Example faculty experience (extremely positive + high "Sense of Purpose")

"... I can't even begin to tell you how difficult this task seemed to me when I first realized that we would have just two weeks to convert every lecture and every lab class for the rest of the semester from the way we had been teaching for my entire career to fully online instruction... I don't think I have ever worked so hard, learn[ed] to use new online tools for recording lectures and holding meetings online. It was intense but we kept going because we knew that in a matter of days we would be reopening the university for fully online instruction... At the end of that first week of online classes the President of our University sent an email to our faculty congratulating them on the successful reopening of our university... I am awestruck by what my colleagues and I have accomplished in just a few short weeks... I am proud and deeply moved by what we have accomplished so that we may continue to the best of our abilities to serve our students!"

Example student experience (extremely negative + low "Sense of confidence")

"My transition to online classes is both one of understanding and annoyance. My understanding comes from knowing that all of the professors are being forced to take on an online approach despite not planning for the type of teaching and technical know-how that requires. My annoyance is that due to this lack of being equipped to handle a sudden and abrupt transition, some of my current professors have shown a marked decrease in actually teaching, or don't teach at all anymore. They instead opt to simply give out assignments, and give a due date. This degree of self teaching isn't the reason I pay for higher education. Beyond that, the course load has actually increased in difficulty due to

these shortcomings. Some of my friends have had to drop classes they wouldn't have, despite originally being scheduled to graduate after this semester.”

Outlier faculty experience (negative)

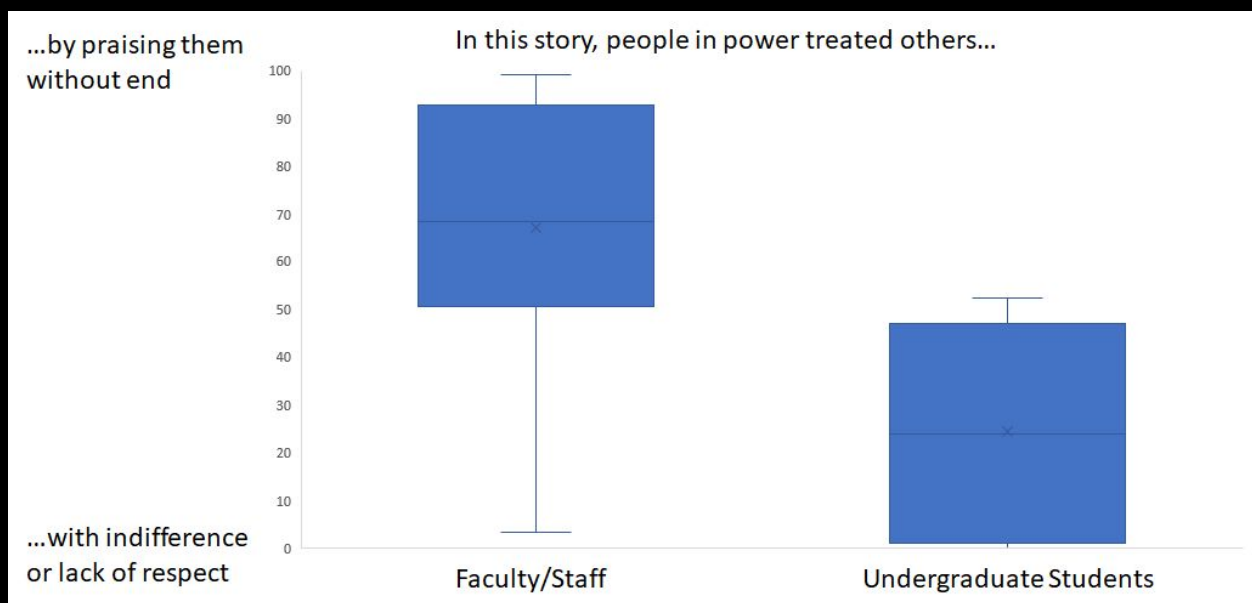
“Normally I award a substantial amount of credit for setting up problems correctly. This allows me to see how students are approaching the problem and where misunderstandings or confusion occurs. With online exams, it is much harder to do this. Thus students are evaluated on arriving at the final answer only, and not how they arrived at it.”

Outlier student experience (positive)

The student who reported the only positive account in the dataset did not give permission for their story to be included in public reports. We can, however, report that this student rated this story high on “Be willing to adapt,” as compared to “Take risks” and “Have a ‘can-do’ attitude.”

Perceived behavior of people in power

The majority of faculty and staff indicated that “People in positions of power” are praising them; while the majority of students indicated that people in power are acting with indifference and/or a lack of respect.



Example undergraduate student experience (~26 on the scale)

“Engineering has always been challenging for me, however I've always seen it as a puzzle; something that pushes my mind to think differently but excites me at the same time. I think I enjoy it so much because I'm able to work through problems at my own pace; I have a definitive start and end to my day. However, with online learning, I've found myself not enjoying my classes as much. Zoom classes seem to be too impersonal to me, messages about assignments are left unread via text and email, and even phone calls get lost in translation. As a result, I've found myself taking longer to complete assignments and lost a lot of the motivation I had before COVID-19. Without peers to work with and professors to guide me in person, I'm finding online education very distant and frustrating.”

Example faculty experience (~91 on the scale)

“Briefly, I had everyone turn their video on so they could say hi to each other for my first class after returning from the extended break. Normally I keep video for students off to save on bandwidth and prevent slowdown of material, but I thought this was nice since I have not seen them for weeks and do not get to regularly see their faces. I think they appreciated it as well and many of them were smiling and wanting to show their living situation (and pets!)”

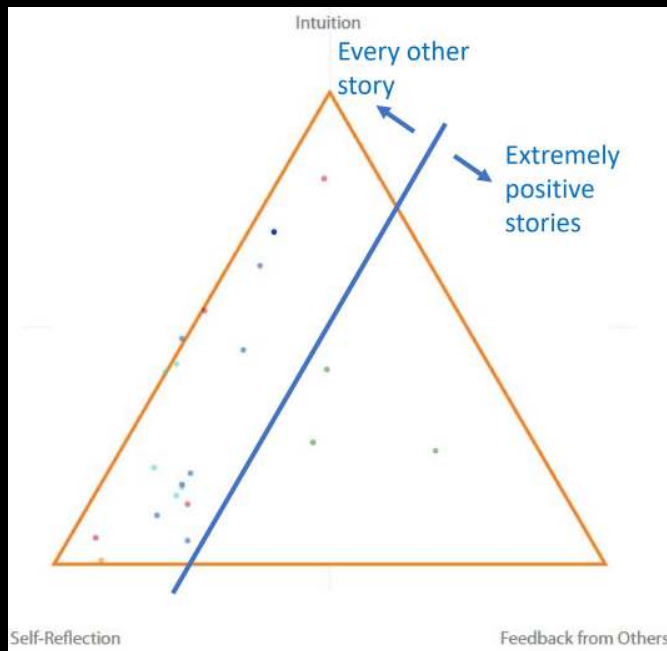
The importance of feedback from others

After telling their stories, faculty, staff, and students were invited to answer questions of three different types: triads, dyads, and multiple choice questions. The whisker plot illustrated on the previous page is an example of the results from a dyad-type question, which comprises a prompt with two possible answers that lie on two extremes (e.g., “People in positions of power treated others by...” “Praising them without end” or “With a complete indifference or lack of respect.”) This whisker plot was *filtered* using participants' responses to the multiple choice question “I am a... Faculty member, Undergraduate student” etc. On the next page, we present the results from one of the triads. Triads are designed to “capture nuances in the experiences of participants that traditional surveys cannot convey” Van der Merwe et al. (2019).¹

For example, one of the triads in our study had the following prompt: “The decisions that were made in this story were influenced by...” “Intuition, Self-Reflection, and Feedback from Others.” Participants were asked to move a dot to the place on the triangle (triad) that best fit with what happened in their story (Was it primarily intuition? A combination of Intuition and Self-Reflection? Or a combination of all three possible responses?). To further quote Van der Merwe, “Deliberate ambiguity among options in... [triads] invites people to exercise their own judgement, which triggers slow thinking and retrospective sensemaking (p. 6).

¹Van der Merwe, S. E., Biggs, R., Preiser, R., Cunningham, C., Snowden, D. J., O'Brien, K., . . . Goh, Z. (2019). Making Sense of Complexity: Using SenseMaker as a Research Tool. *Systems*, 7(2), 25.

As illustrated below, the majority of the responses in the Decision-Making triad were placed along the side connecting Intuition to Self Reflection. Only three stories were placed closer to the Feedback from Others corner. These three stories, however, were the only three “Extremely positive” stories in the dataset. This pattern may point toward an “adjacent possible” (Van der Merwe et al. (2019, p. 3), that is, a potential direction in which to shift the system. If we can find ways to enable participants to experience more Feedback from Others, it is possible that there will be more positive stories.

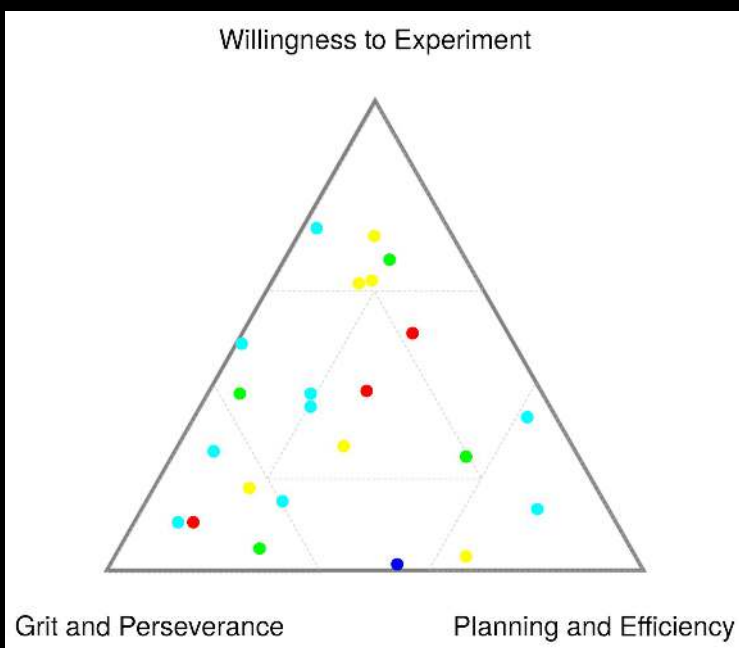


Example faculty experience (extremely positive, relatively higher “Feedback from Others” and high “Sense of Purpose”)

“I’m in the process of designing a multiple-choice test for my course. My test will be open-book and take-home. I’ve developed a test blueprint based on Bloom’s taxonomy in order to make sure that I’m covering all topic areas. I’ll also include some calculation questions. I want to run this exam on eLC. I will notify the students about academic ethics and test rules before the test and encourage them to use resources around them and work independently.”

The importance of willingness to experiment

Stories involving a heavy preference toward “Grit and Perseverance” or “Planning and Efficiency” were more likely to be negative than those demonstrating a preference toward “Willingness to Experiment.”



Red dots indicate extremely positive experiences.

Yellow dots indicate positive experiences.

Green dots indicate neutral experiences.

Light blue dots indicate negative experiences.

Dark blue dots indicate extremely negative experiences.

Example undergraduate student experience (high “Grit and Perseverance”)

“It’s proving much harder to do well in school because I don’t have friends or faculty to converse with face to face. Also, just by nature, school feels very “optional” because we don’t have a dedicated schedule and location for it. At least for me, I find the situation much harder to do well when expectations haven’t changed much.”

Example staff experience (high “Grit and Perseverance”)

“I liked working from home until I didn’t. I enjoy the flexibility of working from home and being able to spend time with my family. I think it makes me more productive and happy. It was fine until my roommate returned. Now I have to fight for space and quiet time so I can work well. I went from being happy and productive, to frustrated and distracted.”

Example faculty experience (high “Willingness to Experiment”)

“This story is about my transition to trying oral exams for [name of course]. I have believed for a few semesters that the traditional exam process is not used for the right reasons. I don't think exams actually assess what faculty seem to think they assess. And I think educational experiences should model professional experiences so that students have an opportunity to practice that which they will be asked to perform in the real world--and practicing engineers are rarely if ever asked to sit by themselves and quietly work on a series of problems for an hour or two. So I've wanted to try giving oral exams for a while. It's not a perfect solution, but I think it's better than traditional exams in many ways. This semester, I decided to give each of my students the option of taking a more traditional exam online during our class time or taking an oral exam during a 20-minute time slot of their choosing... I have given one oral exam to-date. I think it went really well!... I knew I wanted to try oral exams for about a year now, but I was scared to try it out. The fact that this semester has already been affected by COVID-19 helped me to try out this new approach finally, because it's easier to try something new that might fail when the stakes have been lowered by a pandemic.”

Difficulties working from home

Faculty, staff, and students all described difficulties associated with working from home.

Example student experience

“With the switch to online learning, a major struggle I have been having is planning. Although technically it seems to be the same amount of work, I feel so much more stressed and anxious. I'm used to a collaborative atmosphere, and not having peers, professors, and other friends to work with and hang out with has made me feel very frustrated. I've also been struggling to balance the amount of work I have with home chores I have to do and learning over Zoom is not proving to be effective for me.”

Example staff experience

“Balancing work obligations and responsibilities with two young boys at home. Schedul[ing] appears to be very important and removing myself from the house to make necessary calls while going on walks alone... have proved the best method. Also, finding distractions for scheduled zoom or video calls with colleagues, teammates, bosses and donors. The boys are great, but young and in need of attention so that has been a challenge among many others.”

Direct experience with COVID-19

Some members of our college have family members or friends who have been diagnosed with COVID-19. These accounts described high levels of stress and point to the need for us (faculty, staff, and students) to act with compassion. It is encouraging to see that the student quoted below reported finding a sense of purpose in the midst of such a challenging situation for themselves and their family.

Example student experience (high “Sense of Purpose”, neutral emotion, minority status)

“My [family member] has COVID-19. I have been an emotional wreck seeing so many I love hurting. However, I’m determined to see this through. It’s a historical moment in the making”

Other Opportunities

Finally, some of the stories point to opportunities for the college to take the lessons-learned during the COVID-19 crisis to better serve more diverse populations in the future. The following account describes how a level of access that was once thought to be impossible for differently-abled students is now the new normal.

Example student experience (will think about this story “very often” a year from now)

“Little did I know how much COVID-19 would impact my life like this. Transitioning to online isn’t too bad for me because it gives me some relief in terms of attending classes. I have some personal issues where it’s hard for me to physically get to where I need to , so the online has taken that stress out.It really puts a lot into perspective. For one thing, I think of many who are physically disabled and many who ask for accommodations, but were denied the right and therefore had to disrupt their academic pursuits by dropping out of school because they couldn’t get classes online. But now that this pandemic affected able bodied people, now we see accommodations that were once deemed impossible. It makes me think of what our “normal” way of life had so many issues to it and so much that needs to be changed especially now that the pandemic is taking lives due to measures not being taken sooner.”

Final Comments and Next Steps

This interim report is based on the first 23 stories collected as part of this research project. These findings have been disseminated to the Dean and School Chairs in the College of Engineering, as well as to all faculty, staff, and students. The research team aims to write another interim report as significant insights emerge.

We invite all faculty, staff, and students to share their stories about how they are experiencing the COVID-19 crisis and transition to online learning - and ask you to invite your colleagues, peers, and students to do the same. The more stories we have, the more accurate picture we will be able to build of how our college is coping with the current crisis, and the better we will be able to respond to emerging challenges and opportunities.