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Well, as I mentioned before, I think online options for instruction can in fact, in a sense, level the playing field. women who are underrepresented in many of the STEM fields, but also for other underrepresented and underserved populations. So this can happen, but we need to plan for that in a very purposeful way. One of the things that I think we need to acknowledge and think about how we will address is the fact that for many women, the burden of childcare falls disproportionately onto them. And so for many young moms, at a time when it's really those prime years when they could be studying during undergraduate or graduate work to prepare for long-term professional careers, but in fact, they may be constrained because, as I mentioned, the duties of child care typically are more on the mother's side, simply a reality of the societies we happen to live in.

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So I think we need to think very carefully about how we can address that imbalance. And certainly we can see with many online options that young moms could in fact be taking that don't require them to travel to a university or move away in fact. So I think this is one way that we can use technologies to help diversify the student body within STEM areas. I think in terms of the instructors and female representation, there's some interesting early research looking at differences in how females teach online classes and how males teach online classes. And while the evidence is very early and is not strongly conclusive, one of the things that anecdotally anyway that we look at is that women tend to be somewhat better at building a sense of community in classes.

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And this is a critical component for online instruction. I'm familiar with a community college, a regional institution here in the United States, that when it began its distance education options, and this was a long time ago, in the 1980s, in fact, before the internet was widely adopted, one of the things they said about their remote instruction that I especially liked was, you're on your own, but you're not alone. And I think that's something that is very important for a student body that may be geographically dispersed. And so as we're looking at differences in how instructors approach online education, one thing, as I said, is that we have seen that female instructors, whether face-to-face or online, typically are a little bit better at building that sense of community and establishing that sense of the learning group.

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And so I think this is one reason that we need to be very interested in attracting a greater number of female instructors within universities, whether that's face-to-face or online, and ensuring that for our female students and other underrepresented groups, that they recognize that they have a place within that discipline because they see instructors who look like them. Now, in terms of different disciplines within STEM, I think there are, in fact, some disciplines that lend themselves more readily to high-tech approaches or certainly online instruction. You know, many years ago, when people would ask me, are there skills or are there courses that you can't teach at a distance?

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And I would sort of flippantly say, well, there are two things, brain surgery and ballroom dancing. that is that for the brain surgery example, not only the sort of safety issues, but in many cases you want the immediate oversight of the expert to be with the learner at the time that they are learning the skill. welding or any number of especially physical skills, I think we need to consider the value of having someone immediately accessible with the learner. And so thinking about how we incorporate those elements into otherwise highly innovative, different types of instructional configurations is very important. Now, stepping back to my other example, the ballroom dancing example. So, if I am alone ==I will be less successful in that environment, because== with some kinds of things, I need to be engaged with another person at the same time, in the same place.

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So again, as we look at possible configurations for our instruction, identifying those kinds of skills or those kinds of activities that benefit from being with another person, I think is very important. And this also reinforces the value of a hybrid or blended sort of teaching approach, where we do things online that are best done online. For example, discussion forums that encourage students to reflect and spend time thinking about what they want to say to their peers, the kinds of activities that work best in the face-to-face activity. So for example, when students benefit from immediate access to a teacher and how we can accommodate that with technology.

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So I think that as we look at disciplinary differences, we really need to think about of learning that students will engage in, and what the instructor's role is going to be in that process as well.