

Women in STEM: *Picture a Scientist*

Winter Town Hall

Co-Hosted by IEM and the Bioengineering Diversity Council

The UC San Diego Bioengineering Diversity Council, which promotes the interests and advancement of women and minorities in the bioengineering department at UC San Diego, hosted a Winter Quarter Town Hall on January 15, 2021. The theme of this quarter's town hall was "Women in STEM: '[Picture a Scientist](#)'", and centered on the experiences of female scientists as depicted in the film, [Picture a Scientist](#). [Dr. Stephanie Fraley](#), Professor of Bioengineering and Chair of the Bioengineering Diversity Council, mediated a discussion among six female panelists addressing topics from the film such as gendered harassment and discrimination.

Each of the panelists, including Fraley, are women in different stages of their scientific bioengineering careers, from undergraduate student to Vice Chancellor for research.

Speakers

[Stephanie Fraley, PhD](#), is an Associate Professor of Bioengineering at UCSD and Chair of the Bioengineering Diversity Council. Dr. Fraley researches contextual bioengineering, which focuses on developing technology to measure and recreate biological contexts. Dr. Fraley has won numerous awards for her scientific work and for her advocacy work promoting diversity, including the NSF Career Award, 2019 Biomaterials Science Emerging Investigator, and the Excellence in Diversity and Inclusion Award for New Faculty.

[Sandra Brown, PhD](#), is UC San Diego's Vice Chancellor for Research, and is a distinguished Professor of Psychology and Psychiatry. Dr. Brown is an internationally recognized figure who has over 300 peer-reviewed publications and has won numerous [research awards and recognitions](#), including the Distinguished Scientific Contributions to the Application of Psychology Award from the American Psychological Association (APA).

[Sangeeta Bhatia, MD, PhD](#), is a distinguished biomedical researcher, MIT professor, and biotechnology entrepreneur. She is a [Howard Hughes Medical Institute Investigator](#), the Director of the [Marble Center for Cancer Nanomedicine](#) at the Koch Institute for Integrative Cancer Research at MIT, Director of the [Laboratory for Multiscale Regenerative Technologies at MIT](#), and an elected member of the National Academy of Sciences as well as the National Academy of Engineering.

[Daniela Valdez-Jasso, PhD](#) is an Assistant Professor of Bioengineering at UC San Diego. She joined the UCSD Bioengineering Department in 2017 from the University of Chicago, where she had been an assistant professor for four years. Dr. Valdez-Jasso researches the cardiovascular adaptations to pulmonary arterial hypertension.

[Maya Rowell](#) is a 2nd year PhD student at UC San Diego studying bioengineering. She is currently researching cancer cell migration through use of microfluidics and hydrogels in [Dr. Stephanie Fraley's lab](#). Maya is also a member of the UCSD Bioengineering Diversity Council, and a [Jacobs School Racial Equity Fellow](#).

[Rafaela Simoes-Torigoe](#) is a 4th year undergraduate student at UC San Diego majoring in Bioengineering: Biosystems and minoring in General Biology. She is currently an undergraduate student researcher in [Dr. Frank Talke's medical devices laboratory](#), and is the Vice President of the UCSD student organization Engineering World Health.

Discussion

Each of the six panelists brought their unique experiences and opinions to the table as Dr. Fraley moderated discussion. The first topic that Dr. Fraley introduced was the concept of a “minority time tax”, where minorities feel pressured to participate in activities in order to promote diversity. Dr. Fraley noted that the town hall itself was an example of the minority time tax, as the female scientist panelists had been requested to spend their time at this discussion. Dr. Fraley asked the other panelists to share their thoughts on and experiences with the minority time tax.

Rafaela Simoes-Torigoe, a UCSD Bioengineering undergraduate student, noted that while it was true that discussions such as the town hall were examples of the minority time tax, she feels that it was important for minorities to attend events such as these, and to bring light to issues surrounding diversity. Maya Rowell, a UCSD Bioengineering PhD student, felt similarly to Rafaela. While events promoting diversity do take a lot of time, Maya likes the sense of community that attending these events bring. Maya believes that such work is for the greater good and allows her to give back to the community, which makes it feel rewarding for her.

Dr. Sandra Brown agreed with Rafaela and Maya, though as a faculty member, she had a slightly different perspective on volunteer work promoting diversity. Dr. Brown acknowledges that underrepresented minorities are often reporting that they want to bring value to their community, but states that this leads them to engage in activities that take more time and yield slower results. Dr. Brown believes that this time and extra effort is valued and rewarded on an institutional level.

Dr. Brown went on to remark that it is difficult to manage time in academic and industry environments, particularly with issues that women face like work-life balance. She said that not spending more hours isn't not rewarded as well from an academic perspective. There are many changes that institutions need to make for underrepresented minorities and for women in the research field to have a good work-life balance. She believes that institutions should set up infrastructure to support female and minority academics, which would make careers in academia more attractive for female and minority scientists.

Dr. Sangeeta Bhatia agreed with Dr. Brown that there is an important conversation to be had about how to be successful and manage your time, and to get energy from your community. As an advisor to the Society of Women Engineers at UCSD, she often gets asked to speak about work-life balance, which ironically intrudes upon her own personal time. Dr. Bhatia believes that researchers and institutions need to begin sharing norms that redefine the cultural expectations in academia. As women and racial minorities, she notes that she and others are happy to serve and add their voices, but they need to be more vocal about boundaries and start adapting norms, which were set up for different people with different time constraints.

Dr. Stephanie Fraley added that she is always asked to be on committees, for the sake of diversity. However, institutions can't have diverse committees without a diverse faculty body— if the faculty isn't diverse, it puts a lot of burden on minorities to step up and fulfill this need. This is why Dr. Fraley focuses on active hiring of female and racial minority faculty, to increase diversity of the faculty body itself.

Dr. Daniela Valdez-Jasso explained that while she loves to meet a lot of people and participate in diversity activities, which gives her a lot of energy, she has come to realize that she spends a lot of time on campus doing activities, more so than her other colleagues. Adding onto Dr. Valdez-Jasso's experiences, Dr. Stephanie Fraley brings up the faculty review. Dr. Fraley remarks that if diversity-promoting activities aren't taken into account, then being active in them would actually be a negative in the eyes of a faculty review. Dr. Fraley believes that institutions need to document and better appreciate such activities.

Dr. Sandra Brown emphasized Dr. Fraley's point that faculty need to be given sufficient credit for participating in diversity-related activities. She says that institutions need to empower junior faculty by taking action such as setting limits on time for meetings. Dr. Brown suggests that instead of becoming a committee member, minorities may request to be an advisor or consultant instead. At a certain point in your academic career, Dr. Brown notes, once you've demonstrated value and people are asking you to be engaged, don't be afraid to set boundaries and not participate in absolutely everything. Dr. Bhatia pointed out that when she was asked to be on a certain committee, she told them that she couldn't do any writing, but the committee was still very happy to have her input.

At this point in the discussion, Dr. Daniela Valdez-Jasso brought up a different and very pertinent topic of discussion. While she is proud to be Mexican, and proud of her diverse background, she resents it when she's not recognized as herself for all her own accomplishments. Dr. Valdez-Jasso likes to engage her community, and knows that seeing her as a professor makes people see that it's possible for them, but wants to make sure that her own identity isn't lost. She wants to be seen for herself, and not as an ethnic group. Dr. Valdez-Jasso feels that it's not a compliment to say - "You're the 2nd female hired at Jacobs" - because it emphasizes her status as a minority and doesn't acknowledge her identity as a researcher. She says it's taxing to have her scientific work not properly recognized.

Dr. Stephanie Fraley remarked that women tend to be thought of for committees and outreach, but when it comes to science, women aren't considered. She noted that there is reputation tax for diversity activities - the first thing associated with your name is diversity activities rather than actual science.

Dr. Sandra Brown said that she's tried to help alleviate this problem. In every context that she's worked, she's set up informal times to get women to get together and talk as scientists. She stated that it's incredibly important to let other people know about your science, to speak about your science, and advocate for other female scientists when they're not there. She emphasized that researchers must let people know who you are as a scientist, not only who you are for your community. She stated that women and minorities shouldn't be afraid to talk about the work that they do, not just to the people in power but to colleagues so they can speak on your behalf about your science, and your skills.

Dr. Stephanie Fraley brought up another solution to the problem of not being seen for the scientist you are: networking. She told attendees to start earlier, build connections, and network. For example, UCSD has some of the best undergraduate organized research presentations, which can lead to collaborations.

Maya Rowell acknowledges that, pre-COVID, conferences gave students the ability to talk about their scientific work, but now it's harder to talk about research because COVID-19 has limited the avenues to do so. Dr. Stephanie Fraley notes that there will be virtual undergraduate presentations, such as the BMES Lab Expo. Dr. Fraley said that the end goal is to be exposed to different labs, get to know what's going on, and interact with other researchers.

Adding onto the discussion about virtual opportunities, Rafaela Simoes-Torigoe notes that it requires a lot of initiative from the individual to go and look for opportunities. While she is glad that UCSD has the infrastructure to give opportunities, it is a lot more work - with COVID, it's not just about going to the events where you can build connections, but in cases where students are getting started, it is a struggle for people to get their foot in the door and start getting these new experiences.

Dr. Sangeeta Bhatia added onto the discussion of how important it is for female and minority scientists to ensure that others know about their work. She brought up her personal experience of starting companies. Dr. Bhatia was noticing that women faculty at MIT weren't starting companies, so she did a study with Hopkins University and found that very few companies are being started by women. Many companies were men starting companies amongst themselves, and not including women. Dr. Bhatia said that important questions to ask were, "How do you make women top of mind, let people know what you're working on, how do you as a woman let people know what you're interested in?" Dr. Bhatia notes that this exposure is a two-way street, and part of it is talking about her work.

Dr. Daniela Valdez-Jasso remembered an instance when Dr. Bhatia couldn't travel because of her family, so instead of going to conferences, Dr. Bhatia emailed colleagues about

her new article. Dr. Valdez-Jasso thought it was a great approach and a good example of finding different ways of promoting your science. Dr. Valdez-Jasso emphasized the importance of being bold and taking risks, but noted that if a scientist is shy and introverted, and standing in front of crowds of people is difficult, workarounds like emails are more comfortable. She states that scientists need to find more ways to speak up and be heard.

Dr. Sandra Brown emphasizes that if a researcher wants to be connected with faculty, or is interested in meeting someone, don't be afraid to ask. Faculty want to be helpful to their students, and students' success actually adds to faculty's success, she states. Mentorship is incredibly important, and many faculty members are willing to provide it.

After this discussion about promoting your own research work, Dr. Stephanie Fraley introduced a heavier topic of discussion: hidden gendered harassment, such as bullying and stereotyping, which can be in one-on-one conversations or interactions that no one else sees. She notes that one-on-one harassment is an incredibly challenging kind of harassment to take on, so she asked the panelists, "Do you have any strategies or suggestions to deal with harassment?" Dr. Fraley remarks that, unfortunately, she would think that every woman participating in this town hall has experienced harassment of some form.

Dr. Daniela Valdez-Jasso recommends reading the book [Difficult Conversations: How to Discuss What Matters Most](#). She said that reading it helped her manage being in a bullying kind of situation in a strategic manner. Dr. Stephanie Fraley adds that it's important to say something the minute that harassment happens. She says that by simply noting the situation— describing the situation at hand— females and minorities can communicate their discomfort with the situation, which gives you some way of letting the aggressor know that this is not good. Dr. Fraley adds that being quiet is natural if there is a power dynamic, but this puts the burden onto the person who's dealing with the harassment. She recommends that women say something, and get it off your chest.

Dr. Sandra Brown noted that to say nothing but to expect the future to be different is unrealistic. She stated that there may be bad habits and a toxic culture that people don't recognize, so they must be brought into awareness. The only way to create opportunities for change is to say something, including if you are a bystander, in which case standing up for the bullied person is always helpful.

Open-Floor Discussion

At this point, Dr. Fraley invited audience members to share their own thoughts and opinions with the panel. UCSD Bioengineering PhD student Ed Kantz shared that he was aware of the issue of gendered harassment and discrimination, but the documentary *Picture a Scientist* was quite depressing to watch. Ed felt that hearing individual stories is part of an important discussion on how much of a negative impact one person can have on females in the science field. Ed asked if there are any systems in place at UCSD or other universities that serve to remove people like the toxic advisor in the movie. He notes that institutions can't count on

students to come forward with complaints because of the power dynamic and potential implications on the students' future careers.

Dr. Stephanie Fraley shared that every university has an Title IX officer to bring these issues into light. This officer takes issues out of the hands of the department, and brings responsibility to the university as a whole. This circumvents power dynamics within departments. Dr. Fraley adds that within departments themselves, no existing processes or structures exist. She says that the Bioengineering Diversity council has heard from students that they'd like means of mediation or discussion about certain situations, and the diversity council is currently working on these issues for the bioengineering department. Dr. Fraley ends her comments by saying that each department is different, so it is the Title IX office that provides independent jurisdiction.

Dr. Sandra Brown agreed that the Title IX office is a good place to take concerns. Besides going to the Title IX office, she suggested that students attend student counseling services, which provides counselors and individuals that can help you in your setting. She emphasizes that departments are responsible for taking care of these things, as well as faculty. Faculty always has the responsibility to bring issues forward to address, even if concerns aren't being shared through an official channel such as the Title IX office. Dr. Brown said that any undergraduate or graduate student can tell any faculty member that a situation is a concern, and that you need advice. It is the faculty's responsibility to resolve those issues, or to move issues forward. Even if no additional action is wanted or warranted, a complaint may just be added to the faculty member's record. Dr. Brown said that UCSD has removed tenured faculty for inappropriate sexual behavior, so the university does taking action when these types of things go on. She notes that the university has a much stronger obligation to act under Title IX, which is good news for everyone in an underrepresented status/

Dr. Stephanie Fraley says that times have changed, even since she was a graduate student herself. She said that there are a lot more protections in place, especially for students. While women will still need to stand up for themselves, at least there are mechanisms and protections for women to say something. Dr. Sandra Brown also notes that women are more empowered to take action. She says that it is incredibly important to talk to someone you trust about the issues you are facing.

The Bioengineering Diversity Council is planning on holding quarterly town hall meetings in the future. For more information iem@ucsd.edu or Stephanie Fraley sifraley@eng.ucsd.edu