The McBride Honors Program and Engineering, Design & Society Department are pleased to co-sponsor a presentation by Mines alumna, Dr. Jessica Deters

**Engineering Culture Under Stress: A Comparative Case Study of Mechanical Engineering Student Experiences During COVID-19**

**Friday, March 3rd, 2023 | 3:30-4:30pm | CoorsTek 150**

Much research to date has characterized engineering culture, highlighting its rigidity, emphasis on hard work, and lack of diversity. However, while the engineering cultural landscape was characterized in these ways pre-pandemic, COVID-19 provided an important opportunity to explore how engineering culture responds to a major disruption. Prior research on disasters shows us that extreme events – including the COVID-19 pandemic – can help illuminate underlying structural challenges and inequalities as well as tacit beliefs that motivate decisions. Investigating engineering culture during a disaster (i.e., COVID-19) allows us to investigate which beliefs persisted and which shifted in response to the pandemic. In other words, disasters can help uncover what really matters and potentially offer a new avenue for cultural change. Just as fatigue tests tell us about the strength or failure points of metals and other materials, a culture under duress can tell us much about that culture’s capacity for resilience.

This seminar presents results from a qualitative comparative case study aiming to understand how elements of engineering culture emerged in mechanical engineering students’ constructions of their classroom experiences during the pandemic, and how those experiences varied across two national contexts: the U.S. and South Africa. We find that hardness and difficulty remained central features of engineering culture, based on student perceptions, and students expressed acute awareness of resource-related differences.

Dr. Jessica Deters is an Assistant Professor of Mechanical & Materials Engineering at the University of Nebraska – Lincoln. She is a Disciplinary-Based Education Research (DBER) faculty member in the College of Engineering at UNL and advises students in the Engineering Education Research PhD Program. Deters holds her PhD in Engineering Education and a MS in Systems Engineering from Virginia Tech and a BS in Applied Mathematics & Statistics and Honors Minor in Public Affairs from the Colorado School of Mines. Her areas of research include engineering culture, workplace preparedness, international experiential learning programs, interdisciplinary programs, and comparative engineering education. Her research experience and interests span domains, allowing her to take a systems-thinking approach to critical engineering education research questions.