Abstract: Research shows inequitable participation patterns are pervasive in undergraduate STEM classes. Thus, an important consideration for statistics instructors is promoting participation by students with historically marginalized backgrounds. In particular, statistics graduate teaching assistants (GTAs) need additional support since many of them are new to teaching. In our project, Modules for Statistics GTAs Learning to Teach Equitably with Authentic Data, my colleagues and I are developing teacher learning opportunities that can provide essential teaching practices to GTAs while attending to equitable student participation. In this talk, I will focus on my research on the complexity of promoting participation by students with marginalized backgrounds. Based on a fine-grained study on classroom interaction, I highlight the mutuality and relationality of student knowledge as a key consideration when statistics instructors work to disrupt inequitable patterns of participation.

Bio: Dr. Sunghwan Byun is an assistant professor of mathematics education in the Department of STEM Education and is the director of educational research at the NC State Data Science Academy. His research focuses on discourse and social interaction for teaching and learning mathematics, statistics, and data science. Prior to his academic career, he was a high school mathematics teacher and a National Board-Certified Teacher. His current projects aim to enhance undergraduate data science and statistics instruction, and support instructors in facilitating productive and equitable learning opportunities for students with historically marginalized backgrounds. Dr. Byun received his Ph.D. in mathematics education and M.S. in statistics at Michigan State University.