Making sense of student-generated conditions and assumptions helps to articulate an old pedagogical problem in a new way

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Abstract: Drawing on students’ mathematical thinking during mathematical modeling tasks, I will demonstrate a particular kind of tension that arises which complicates authentic implementation of modeling in the classroom. I will then raise two issues which lie at the crux of understanding how mathematical modeling tasks can be used to promote students’ mathematical thinking. The first is bridging students’ tacit, real-world ways of knowing with mathematical ways of knowing that are conducive to the modeling process. The second is the types of competencies that might be demanded of those who facilitate the bridging process.

Dr. Czocher likes thinking deeply about seemingly simple things such as how people think about and use mathematics and the implications such knowledge may have for mathematics teaching and learning as only one part of educating (as an institutional practice). She studies how individuals (learn to) use mathematical structure to predict, describe, and explain natural phenomena. It’s not a straightforward process, and so there’s lots to do with regards to problem solving, problem posing, mathematical modeling, and the interaction each of these scholarly practices has with curricular objectives.