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Susan D. Nickerson* (snickers@sciences.sdsu.edu), SDSU, Department of Mathematics and Statistics, San Diego, CA. *Opportunities and Challenges in Teaching Mathematical Modeling*. Preliminary report.

Estimating the density of marine populations by categorizing audio signals, quantitatively describing the effect of human activity in drought-induced fires, and measuring natural disasters such as earthquakes are examples of relevant local topics that can engage secondary teachers and students.

The secondary school curriculum as envisioned by the authors of the Common Core Standards (CCSS) and the Next Generation Science Standards (NGSS) describes major changes not only in content but also in students' ability to engage in the practice of modeling. Students are expected to collect data, choose appropriate tools to make predictions, test, and revise models, rather than just represent and describe data. This presents a new challenge for teachers.

In this presentation I will share data on what teachers understand about modeling as described in the Standards for Mathematical Practice and the Next Generation Science Standards. This data helps us design professional development experiences for teachers as they support their students in meeting the new expectations. (Received September 25, 2012)