ABSTRACT:

The Framework for K-12 Science Education and the Next Generation Science Standards embody a developmental perspective on learning in their proposed learning progressions for core disciplinary ideas and science practices. These progressions describe paths of successively more sophisticated ways of reasoning in a domain that develop over the course of schooling. Their development depends on carefully designed instruction that builds on students existing ideas in productive ways. Learning progressions have been touted as a promising approach to aligning standards, curriculum, and assessment. To realize any potential of LPs we need to systematically validate and refine these hypothetical models in real-world contexts. Such validation efforts are challenging, as they require the coordination of messy empirical data with, often, under-specified theoretical models. In my talk I will discuss some of the challenges of developing and testing learning progressions as well as their implications for standards, curriculum, and assessment.

BIO:

Ravit Golan Duncan is an associate professor of science education with a joint appointment in the Graduate School of Education and the School of Environmental and Biological Sciences at Rutgers University. She received her Ph.D. in Learning Sciences from Northwestern University. She currently has two main research strands: designing and studying of inquiry-based learning environments in life sciences that engage students with modeling and argumentation, and studying learning progressions in science education, and specifically in genetics. In addition Dr. Duncan also coordinates and teaches in the certification program in biological sciences at Rutgers University, and has studied the development of pre-service teachers’ knowledge and beliefs as they progressed through the program. She is the recipient of several federal grants and has published in science education and teacher education journals including the Journal of Research in Science Education, Science Education, and Journal of Science Teacher Education.