

## **RILS2017: As they Implement NGSS, Educators face Complexity, Constraints**

When the Next Generation Science Standards (NGSS) were first unveiled in 2013, many pundits predicted they would brush up against predictable problems of politics and cost.

But as attendees of the National Center for the Improvement of Educational Assessment's (Center for Assessment) 19<sup>th</sup> Annual Reidy Interactive Lecture Series (RILS) learned Thursday, NGSS faces a more basic challenge (and opportunity): the ambition of the standards themselves.

The first day of RILS, sponsored by the Center for Assessment, found educators assembled in unseasonably warm Portsmouth, New Hampshire coming to grips with the complexity of the standards and the constraints states, districts and classrooms face in implementing them.

Educators grappling with the new standards are on a "head-on collision with cognitive complexity," said April McCrae, the education associate for science assessment and state STEM coordinator for the Delaware Department of Education.

She urged educators to move past education jargon and the familiar alphabet-soup of acronyms to ask: "What is the intent of the standards?"

NGSS was designed to avoid some of the pitfalls that befell math standards—such as the separation of the content and practices—but also to embrace the uniqueness of learning science. Scott Marion, Executive Director of the Center for Assessment noted that the NGSS were created to fundamentally change the ways in which students learn science.

"It's not what you know, but how you use and apply what you know," said Christopher Harris, director of research for science and engineering education at SRI International's Center for Technology in Learning.

That sounds deceptively simple. The standards embrace "three-dimensional learning," emphasizing a tight integration of 8 science and engineering practices as they relate to learning and applying core ideas while making connections to cross-cutting concepts. In the vision of NGSS, students perform hands-on inquiry in science performance assessments in their classrooms all the time. The new standards are designed to be more immersive and student-directed than the traditional way of learning the scientific method at the beginning of the year followed by "content" lessons and rote labs.

But that simple-sounding premise raises questions that many states are just beginning to address.

During this period of incubation for NGSS, educators are growing accustomed to rapid changes, requiring an adaptivity and spirit of discovery that have always been hallmarks of science.

Kevin King, who leads the State Science Solutions Team at WestED, said states are experiencing a “divergent evolution” of the NGSS and, along with it, a need to correct early hypotheses.

“What people said a month ago we had to have with NGSS might not be true today,” he said.

*Use hashtag #RILS2017 to follow the two-day live tweeting of the event, including a plethora of useful links and best practices. And watch <http://www.nciea.org/> in the coming days for more RILS-related news.*