# Implementing NGSS Cohesively Across the Curriculum

Holly Ellingson

In Springfield Public Schools, the science departments of all of the high schools have been working together for the past two years to align the science curriculum and courses offered both with each other, and also to the Next Generation Science Standards (NGSS). Previously, as far as I know, the two largest high schools have not offered very many courses in Earth sciences, limiting mainly to an Environmental Science course or two and a Geology of Oregon course. One of the primary challenges of our district goal of aligning all science courses with NGSS has been to find ways to make sure the earth science standards are also being covered within the courses that are being taught. Another challenge has been accepting the realization that the methods we utilize to teach science are also going to need to change. While there are numerous talented, dedicated, and powerful individuals who are master science teachers in the district, there is still a shift that needs to occur in order to really do the NGSS service, and to better incorporate the both the earth science, and the engineering and design standards, into the science departments district wide.

Where I teach, at a smaller alternative high school, I've had some freedom to stray from the more regimented courses and to teach a wider array of science content. I personally feel it's important for students to learn about sustainability, so I've ensured that my school has a whole curriculum and materials kit with that focus, and I've also taught various versions of earth science and natural resources (my college majors) over the years at my school (along with Biology and other science courses). I have taught the Lab-Aids Science & Sustainability course at my school three separate years now, each time modifying it as I am able to keep it current and relevant. The curriculum of Science & Sustainability is extremely relevant, and even though it is nearly 25 years old I can still use a lot of it without too much modification. It would be incredible though, to have access to a more current and advanced set of curriculum materials such as the ones I examined on the InTeGrate website.

Now that I am incorporating the NGSS into my teaching, I've had the need to modify the canned curriculum even more, in order to better ensure coverage of all the standards. I anticipate the content of all three of the courses I teach each year to adapt as I further incorporate the NGSS into them. I've already got some plans, and the district NGSS

team (including myself as a member) is working to create the scope and sequence for all of the courses we're teaching, and to show how they align with the NGSS. This will help us all be able to both teach the earth sciences (and engineering & design - another lack district-wide) more effectively, and also to refresh old courses to bring in new, more relevant and current innovations.

Using the NGSS across the curriculum will deeply impact how I deliver instruction, with a more focused and intentional emphasis on engaging student interest using real world phenomenon. This is a terrific and exciting opportunity to redesign and enhance my whole philosophy of teaching to include more relevant examples of how using science and engineering practices and cross-cutting concepts can be applied to help better intelligently understand natural processes and occurrences that affect our everyday lives. Students will be given more opportunities to DO science, and to SHOW their understanding by using models, making simulations, and analyzing data. It's an exciting time to be a science teacher.