NGSS Talking Points

Jennifer Helms, PhD, RN
Arkansans for Education Freedom
jenniferhelms1963@gmail.com

- Not enough chemistry for a stand-alone high school chemistry class
- No high school physics
- There are engineering standards in NGSS, but beginning level physics (missing from NGSS) is needed to learn true engineering standards. Higher level math is also required (pre-calculus, calculus) but common core has pushed this math up into higher grade levels (or out entirely) rather than where it needs to be as a pre-requisite for engineering.
- Dropping high school level sciences will NOT help STEM
- The human body is missing; other essential life science concepts are absent, such as "bacteria" and "virus"; cytology (design and function of cells) is woefully lacking (no mention of protein structure and functions, cellular feedback mechanisms, cell and tissue types, etc)
- NGSS are ***performance*** standards rather than ***content*** standards → rely on group project grades → this means grading on group consensus and writing rather than content knowledge. Teacher is only "guide on the side." Project learning rather than content learning makes it easy to give everyone a good grade. Just throw out a project for a group to work on for a week or two (or more) but don't actually ask them *to know* anything.
- NGSS has a political agenda, with climate change as a major portion of the standards with emphasis on manmade causes of climate change → based on junk science and too many scientific assumptions; based on correlational studies (you cannot claim cause-and-effect evidence based on correlational studies; "correlation does not equal causation")
- Lacking practical everyday science, such as electrical circuits. "Climate change" mentioned 58 times while "electrical circuit" mentioned only once in an elementary standard. Electrical circuit is important content for everyday safety. This content should be repeated at different grade levels.
- >50% of the standards have a "assessment boundary" which specifically state what will not or should not be tested. This creates a teach-to-the-test mentality. Teachers are not going to supplement deficient standards with additional (and sorely needed) content if it is not going to be tested.
- >90% of the standards have a "clarification statement" which reads like a Standards for Dummies explanation on exactly how to teach the standard, what to say to the students, examples to provide the students, etc. (prompting). This looks more like a curriculum than just standards. That would make NGSS a ***national curriculum.***
- Fordham Institute (which should love NGSS because Fordham loves common core) rated NGSS as 26th in a list of 56 standards. That means they are just average. If your state ranks above #26 on the list, why would you dump what you have for something ranked lower? And if your state is ranked lower than #26 on Fordham's list, and you need to

improve them, why would you just settle for mediocrity? Why not rewrite standards to match one of those states in the top 10?

- Evolution makes up 25% of the standards (calculated by actual *number* of standards at high school level) → regardless of any personal views on the subject of evolution, it cannot possibly take *this much* time to teach the content. Why the heavy emphasis on this at the expense of so many other important subjects?
- Page 1 of the Framework for K-12 Science Education, which was the foundation for the NGSS, clearly summarizes the intended goal of the standards:

  The overarching goal of our framework for K-12 science education is to ensure that by the end of the 12th grade, all students ***have some appreciation*** *of the beauty and wonder of science****; possess sufficient knowledge*** *of science and engineering* ***to engage in public discussions on related issues****; are careful* ***consumers of scientific and technological information*** *related to their everyday lives; are* ***able to continue to learn*** *about science outside school; and have the skills to enter careers of their choice, including (but not limited to careers in science, engineering, and technology*.

  This "overarching goal" makes it clear that the NGSS are intended to be a set of **science appreciation standards** rather than rigorous educational standards.