



Jones, Stephanie

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Sent: Thursday, June 24, 2021 11:00 PM
To: ED, State Board of Ed
Subject: [External] comments on PA state science standards

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Ms Molchanow:

My comments concern the proposed new set of Pennsylvania state science standards which would replace the outdated set adopted as long ago as 2002.

I fully support the teaching of evolution, climate change, critical thinking, and the nature of science in Pennsylvania's public middle and high schools.

Specifically, I recommend that:

- Any new standards and learning progressions must present the topics of evolution, climate change, and the nature of science correctly and forthrightly to all students.
- Any new standards must include core ideas, interdisciplinary concepts, and science and engineering practices that are found in the standards used in almost all states (including those to have adopted the Next Generation Science Standards.) These are missing from the proposed standards.
- PA adopt the Next Generation Science Standards (which the Pennsylvania Science Teachers Association recommended in 2018 before the revision process began) instead of the proposed inadequate standards.
- The new standards **MUST EMPHASIZE** these theoretically and practically **CRUCIAL** areas of science as they are understood by the scientific community and **WITHOUT COMPROMISE** to mollify ideological (that is, non-scientific) opposition. Moreover, all aspects of science, engineering, and technology must be presented as rigorously as possible.

In addition, PA's science education standards **MUST BE UPDATED MORE FREQUENTLY** than every 10 years. Science and technology progress so rapidly that many topics are outdated by the time they reach the K-12 curriculum. I recommend that PA's science education standards be updated **NO LATER THAN** every five (5) years.

As a retired research chemist and academic, I believe that Pennsylvania's students are not fully prepared to excel in college and understand these serious global problems. I have encountered **FAR TOO MANY** students seriously deficient in basic scientific literacy. Our students need to be responsible citizens and that includes being conversant on what science is and is not, the consequences of the continuing climate catastrophe, the reality of chemical and biological evolution, and the ability to distinguish between credible and non-credible information sources online and in print.

I urge you to strengthen PA's science education standards as other states have done by adopting the Next Generation Science Standards. Pennsylvania's students cannot wait.

Thank you.

Kristine Danowski, M.Ed., M.S., Ph.D.(c)