

June 4, 2018

Robert Hasson  
Commissioner  
Maine Department of Education  
23 State House Station  
Augusta, ME 04333

Dear Commissioner Hasson,

We, the undersigned eight members of the eleven-person Science and Technology Standards Review Steering Committee, strongly disagree with any conclusion that the Steering Committee has arrived at a deadlock with respect to revisions of the standards. Rather, we are in strong agreement that the Steering Committee recommended that the Next Generation Science Standards (NGSS)<sup>[1]</sup> be adapted into the format of the Maine Learning Results. The specific concerns have been outlined in this letter.

During the first meeting, the members of the Steering Committee reviewed the existing Maine Learning Results for Science and Technology. The members of the Steering Committee agreed that the Unifying Themes (Section A), Skills and Traits of Scientific Inquiry and Technological Design (Section B), and the Physical Setting and the Living Environment (Sections D and E) in the existing Maine Learning Results for Science and Technology each have problems. Broadly, the standards are not integrated with each other, thus leaving the disciplinary core ideas and the practices of science and engineering as separate entities in the standards. This is a glaring weakness in the existing standards and is not consistent with best practices in science education as documented in the science education research literature<sup>[2]</sup>. Further, we concluded that we concluded that portions of the Scientific and Technological Enterprise (Section C) could be incorporated elsewhere while others could be dropped.

During the second meeting, there was a clear majority consensus that the NGSS did an excellent job of addressing the weaknesses of the existing Maine Learning Results, thereby providing standards which were the best for students in the state of Maine. Broadly speaking, the NGSS successfully integrate science and engineering practices with disciplinary core ideas while focusing on overarching crosscutting concepts. Furthermore, the NGSS also successfully addressed many of the more specific problems that we identified with the existing Maine Learning Results. Such problems include but are not limited to: 1) avoiding standards checklists, 2) avoiding standards that require rote memorization, and 3) integration both within the science disciplines (life science, physical science, earth and space science, and engineering) and with other subject areas (mathematics and English language arts). At the end of the second meeting, the majority of the committee supported using the NGSS after adapting them to the standards format used by the state of Maine.

<sup>[1]</sup>NGSS Lead States. (2013). *Next generation science standards: For states, by states*. Washington, DC: The National Academies Press.

<sup>[2]</sup>National Research Council. (2012). *A framework for K-12 science education: Practices, crosscutting concepts, and core ideas*. Washington, DC: National Academies Press.

During the second meeting, two individuals on the Steering Committee raised concerns about the use of the word “evolution” and the phrase “climate change” in the NGSS. Concerns were raised that there might be objections to these terms, and they should therefore be avoided. The response of many on the committee was that these are scientific topics and students should learn to build models based on evidence, one of the core activities of scientific reasoning. The Steering Committee agreed to more carefully review the NGSS prior to reconvening to discuss specific issues related to the use of the word “evolution” and the phrase “climate change” in the NGSS.

When the Steering Committee convened for a third time, one of the aforementioned individuals refused to support adapting the NGSS for the Maine Learning Results if it included “evolution” and “climate change.” Although the individual was asked multiple times to define or clarify any specific concerns with the use of the word “evolution” and the phrase “climate change” in the NGSS, the individual refused. Notably, the individual refused to even identify any sections of the NGSS that were of concern.

This individual’s lack of engagement with the content of the proposed standards and the frank and open refusal to give reasons for objecting was labeled as stonewalling by members of the committee, a term to which the individual agreed quite strongly. These actions prevented us from discussing the issue further. We were led to conclude that this individual was a hostile participant in the conversation, unwilling to participate in a way that would allow us to resolve any differences.

We are deeply concerned that stonewalling will prevent the overwhelming majority decision from being carried out.

In addition to the aforementioned issues, this same individual raised a concern about using “national standards.” The NGSS are not a national set of standards, but rather standards created by a consortium of Lead States which included Maine. This argument, based in evidence, was not accepted by the individual who raised the concern. Again, this showed that the committee member raising the concern was not an honest participant in the discussion.

In sum, the majority of the committee recognized the weakness of the existing standards and overwhelmingly agreed on a proposal to address the weaknesses by adapting the NGSS. The decision was made based on the majority opinion that these standards would be best for the students of Maine and their education in science and engineering. Support for the decision came from several intellectual arguments and after a careful reading of the NGSS. The majority recommendation is supported by our review of comments submitted during the public comment period. Of over 75 comments received, only three objected to adaptation of the NGSS. In addition, in practice, three-quarters of Maine school districts have either formally or informally embraced the NGSS. Vocal dissent came from one member of the committee who did not give intellectual arguments for the dissent and refused to engage in discussion, thus stonewalling until the meeting ended. In such a situation, we suggest that the opinion of the individual who was stonewalling be discounted, and that the majority opinion, to adapt the NGSS, be the one that is recommended to the science standards writing team.

Sincerely,

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