TO: P-12 Education Committee

FROM: Ken Slentz

SUBJECT: Adoption of Next Generation Science Standards

DATE: April 11, 2013

AUTHORIZATION(S):

SUMMARY

Issue for Discussion

What process should the Department use to gather input for the development of a recommendation to the Board of Regents for potential adoption of the Next Generation Science Standards?

Reason(s) for Consideration

For Information

Proposed Handling

This issue will come before the P-12 Education Committee for discussion at the April 2013 Regents meeting.

Procedural History

In 2010, the New York State Board of Regents (BOR) adopted the Core State Standards (CCSS) for English Language Arts (ELA) and Literacy and for Mathematics as part of New York's reform agenda to prepare students for success in college and the workplace.

Background Information

In September 2011, New York State joined as a Lead State Partner in the development process of the Next Generation Science Standards (NGSS) to advance science education in New York State, better prepare students for college and careers, and provide pathways into science, technology, engineering, and mathematics (STEM) fields. In the role of Lead State Partner, the New York State Education Department

(NYSED) agreed to form a Statewide Leadership Team consisting of science education stakeholders, provide feedback at various stages in the development of the NGSS, and give the final published version of the NGSS serious consideration for adoption as New York State's science learning standards.

Status of NGSS Final Standards for Review

The NGSS are based on the Framework for K–12 Science Education developed by the National Research Council. The Framework is an important research-based document that provides a foundation for 21st century K-12 science education. Through a multi-state collaborative process, the NGSS was developed to address science and engineering practices, concepts that cross multiple disciplines, and disciplinary core ideas.

The final version of the NGSS was published by Achieve on April 9, 2013. These standards are accessible online at http://www.nextgenscience.org/next-generation-science-standards. Along with the Standards, available supporting documents include explanations for the structure of the NGSS and several appendices. There are appendices that remain to be completed, including Model Course Mapping in Middle and High School, Connections to CCSS- Mathematics, and Connections to CCSS- ELA Literacy. Anticipated release of a full set of materials, including all supporting documents and appendices, is planned for the end of April.

Process and Proposed Field Engagement Strategy

In anticipation of this release, Department staff developed an evaluation tool to compare current New York State science learning standards and the NGSS to a set of rigorous, research-based criteria. After extensive research of existing evaluation tools, key criteria from standards evaluation documents from the Fordham Institute, the College Board, and the Massachusetts Department of Education were determined to be the most comprehensive criteria for analyzing the merits of standards in a side-by-side comparison. Key categories of the NYS Science Standards Evaluation Tool include: 1) Organization of the Standards, 2) Coherence, 3) Clarity and Specificity, and 4) Content and Rigor. The intent of the evaluation tool is to allow various groups of stakeholders the opportunity to compare each set of standards to the specific criteria to help inform a recommendation for the Board of Regents to consider.

The NYS Science Standards Evaluation Tool has been used in the ongoing feedback process by members of the Science Content Advisory Panel (SCAP), the New York State Science Education Consortium, and the Statewide Leadership Team (SLT) to analyze and compare both sets of standards against the criteria. A list of the members of these stakeholder groups is attached (Attachment A).

In addition, a survey to gather public feedback has been devised based on this evaluation tool. The survey will be released upon publication of the full set of documentation for the NGSS expected near the end of April. Specific details regarding the survey will be finalized after all of the NGSS materials are released by Achieve.

The Department will continue to communicate with the field about the availability of the survey and the opportunity to provide feedback for consideration in developing a recommendation to the Board of Regents.

Recommendation

It is recommended that Department staff analyze feedback from the three select groups of stakeholders and the public survey and form a recommendation regarding the future of science education for the Board of Regents to consider.

Timetable for Implementation

This summer, Department staff will summarize the evaluation results gathered from various stakeholder groups and the public survey and highlight key differences between both sets of full standards.

In September, Department staff will present a formal recommendation to the Board regarding the possible adoption of the Next Generation Science Standards and strategic plan for implementation.

Attachment A

Stakeholder Groups for NGSS

Statewide Leadership Team (SLT) - *convened by SED; provides feedback to Achieve at various stages of NGSS*	Organization
Sheila Appel	IBM
Margaret Ashida	Battelle/STEMx
Kelly Baudo	Buffalo Public Schools
Nicole Bobel	Buffalo Public Schools
Greg Borman	CUNY
Mary Cahill	New York State Education Department
Michael Carpenter	SUNY Albany College Nanoscale Science and Engineering
Jackie Carrese	Capital Area Science Supervisors Association
Marybeth Casey	New York State Education Department
Michael Chan	Rochester City School District
Kin T. Chee	New York State Education Department
Natasha Cooke-Nieves	American Museum of Natural History
Ann Crotty	New York State Education Department
Linda Curtis-Bey	NYC Department of Education
Philip Dettelis	New York State Education Department
Joseph Dragone	Ballston Spa Central School District
Kim Drake Hyland	Guilderland Central School District
Don Duggan-Haas	Paleontological Research Institution
Linda Gentiluomo	Schenectady City School District
Anne Hartjen	New York State Education Department
Kristen Huff	Regents Research Fund
Odalys Igneri	NYC Department of Education
Anthony (Will) Jaacks	New York State Education Department
Michael Jabot	SUNY Fredonia
David Kanter	New York Hall of Science
Anu Malipatil	Regents Research Fund
David Marmor	NYC Department of Education
Judy Mayer	Yonkers Public Schools
Denise McNamara	NYC Department of Education
Julie Nucci	Cornell University
William Ottman	Syracuse City School District
Lawrence Paska	New York State Education Department
Fred Pidgeon	Science Teachers Association of New York State
Charlene Rydgren	Malone Central School District
Thomas Shiland	Saratoga Springs City School District
Jan Stark	Port Jervis City School District
Henry Strada	NYS Technology and Engineering Educators Association
John Svendsen	New York State Education Department
Mark Vaughn	Corning Incorporated
Chuck Ver Straeten	New York State Museum/Geological Survey
Brian Vorwald	Science Teachers Association of New York State
Judy Wegman	Brighton Central School District
Ken White	Brookhaven National Laboratory
Kathy Wronski	Lyndonville Central School District

Science Content Advisory Panel (SCAP) - *convened by SED; advises on the revision and implementation of NYS science learning standards*	Organization
Lawrence R. Aaronson	Utica College
Marie Anderson	Kingston City School District
Jennifer Baxter	Palmyra-Macedon Central School District
Fernando Espinoza	SUNY Old Westbury
Karen Harris	Schodack City School District
Karen Huffman-Kelly	Genessee Community College
David Kanter	New York Hall of Science
Denise McNamara	NYC Department of Education
William Panaram	NYC Department of Education
Kate Perry	Robert C. Parker School
Shane Price	Lyndonville Central School District
Ann Rivet	Columbia University
Susan Sciglibaglio	Bethpage Union Free School District
Mark Vaughn	Corning Incorporated
Linda Weinberg	SUNY Delhi

NYS Science Education Consortium - *convened by consortium; combination of leaders from the 16 regional sections of STANYS and teacher professional organizations across the state*	Organization
John Augenstein	Science Council of New York City
Jackie Carrese	Capital Area Science Supervisors Association
John Cunninham	Science Council of New York City
Connie Duff	New York State Science Education Leadership Association
Steve Fielman	Science Teachers Association of New York State
Fran Hess	Science Teachers Association of New York State
Kathy Hoppe	Science Teachers Association of New York State
Mary Loesing	Long Island Science Education Leadership Association
Linda Padwa	Biology-Chemistry Professional Development Network
Fred Pidgeon	Science Teachers Association of New York State
Patricia Price	Higher Education Representative
Arnie Serotsky	Science Teachers Association of New York State, Co-Facilitator
Mary Thomas	Science Teachers Association of New York State
Bruce Tulloch	Facilitator
Brian Vorwald	Science Teachers Association of New York State