

STANYS and the New York State Science Education Consortium Gear Up for New York State Science Standards Revisions

Arnie Serotsky, STANYS Past President and Bruce Tulloch, Consortium Facilitator

On June 3 and 4, at the Union Graduate College in Schenectady, representatives from the member organizations of the New York State Science Education Consortium met for the group's Summit X to analyze the results of a state wide Science Curriculum Needs Assessment Survey and develop action plans to help guide New York State in upcoming Science Standards revision processes.

Participating in this process were Connie Duff and Joe Zawicki (New York State Science Education Leadership Association), Sister Mary Ita O'Donnell and John Augenstein (Science Council of New York City), Michael Klugman (Capital Area Science Supervisors Association), Laura Maitland (Biology and Chemistry Professional Development Network), Lynn Schoonejans (Long Island Science Education Leadership Association), Arnie Serotsky, Jim Overhiser, Fred Pidgeon, Jennifer Baxter, Patricia Price, Mary Thomas, and Kathy Hoppe (Science Teachers Association of New York State), and Consortium Facilitator Bruce Tulloch.

STANYS / New York State Science Education Consortium Survey

A survey developed by a Consortium committee was made widely available to teachers of science during the Spring semester, and responded to by nearly 1400 K – 12+ educators. Here are respondent's recommendations with combined percentages for agree and strongly agree in parentheses.

Recommendations of Respondents in Priority Order from Highest to Lowest
Future Science Core Curriculum documents at each level and in each subject should:

- Require teachers to provide laboratory experiences with an emphasis on hands-on use of manipulative equipment and materials (88% agreement).
- Provide more real-world experiences of science concepts and principles (86%).
- Include a separate implementation guide that provides some specific models of effective lesson plans and laboratory experiences to support teachers' instructional planning (85%).
- Be developed in collaboration with the Science Teachers Association of New York State, Inc. and other members of the New York State Science Education Consortium. These organizations should take the lead in reviewing and revising the State's K – 12 Science Standards and Core Curricula (82%).
- Include specific content to be taught at each grade level (K,1,2,3,4,5,6,7,8) (80%).
- Organize concepts and skills in progressions that are more logical and developmental than the current core documents (79% agreement).
- Include a separate implementation guide that provides suggestions on how to use reading and writing strategies to teach science concepts and methods (76%).

- Make more explicit connections to mathematics and technology than do the current core documents (76%).
- Include more explicit and clearer specifications of learner performance than do the current core documents (74%).
- Provide more information and suggestions concerning how one might sequence instruction of topics that is found in the current core documents (72%).
- Place greater emphasis on inquiry-oriented learning than do the current core documents (65%).
- Limit or reduce the breadth and increase the depth of content expected to be learned in comparison to the current core documents (62%).
- Take into greater account what is known about science learning and student alternate conceptions than do the current core documents (62%).
- Be retained along with their assessments (58%).
- Organized with content and skills around major “essential questions” rather than around the key ideas in the subject area, as do the current core documents.
- Provide more information about the history and nature of science than do the current core documents (53%).

STANYS / New York State Science Education Consortium Action Plans

After analyzing the survey data and considerable discussion, three groups were formed to suggest both immediate, short term, and longer-term tasks and projects to be undertaken. The groups committed to a number of immediate and short term actions including:

- Sharing the results of the survey, in appropriate formats, with the appropriate decision makers and organizations. Examples would include STANYS members through this Newsletter article and a future Bulletin, Commissioner Steiner and First Deputy Commissioner King of the New York State Education Department, the New York State Board of Regents, and members of the New York State Senate and Assembly Education Committees.
- Seeking a meeting with Commissioner Steiner and/or First deputy Commissioner King to discuss the future of science education in New York State and the role of STANYS and NYSSEC.
- Monitoring agendas, meetings, decisions, etc. of decision makers at the State and national level that impact science education.
- Continuing to communicate regularly with our colleagues at SED responsible for science education by way of the bimonthly telephone conferences, inviting

them to SSTANYS Board of Directors meetings, the STANYS Annual Conference, and future Consortium Summit meetings.

- Reviewing the draft of the Framework for Science Education prepared by a committee of the Board of Science Education of the National Research Council of the National Academies. This document was released on July 12 and is scheduled to be the basis for the national Common Core Standards in Science.
- Continuing the review of various science standards documents prepared by states, national organizations, and other nations. We have already reviewed Massachusetts, Alabama, Connecticut, South Carolina, and California, and intend to do several of the other states committed to the Partnership for Assessment of Readiness for College and Careers Consortium, of which New York is a Governing State.

Longer-term projects suggested by the Consortium committees include:

- Developing a position paper that suggests and advocates for best practices in K-12 science teaching. This would include, but not be limited to hands-on activities; valid and user friendly curriculum; appropriate performance, formative and large scale summative assessment; inquiry learning; problem solving, STEM integration; and appropriate scheduling of science instruction in the school day.
- Developing a collection of resources that support developmentally appropriate learning outcomes.
- Developing a list of appropriate laboratory skills for each commencement / high school laboratory course and for every level of K – 8.
- Developing resources to support instruction that offers multiple opportunities and ways to learn science.

Several of the immediate and short-term actions have already begun, and almost all of the attendees of the New York State Science Education Consortium's Summit X have made commitments to pursue the action plans this fall. There will be a session at the 115th STANYS Annual Conference to report and discuss the progress to that point and to enlist the participation of our colleagues in attendance.

If you have questions about the work of the Consortium as outlined in this article, please contact Bruce Tulloch, Consortium Facilitator (tullochb@uniongraduatecollege.edu) or Arnie Serotsky, STANYS Past President (arnieser@aol.com).