

October 18, 2010

The Honorable John Holdren
Co-Chair
President's Council of Advisors
on Science and Technology
White House
1600 Pennsylvania Ave., NW
Washington, DC 20500

The Honorable Eric Lander
Co-Chair
President's Council of Advisors
on Science and Technology
Professor, MIT
Director, Broad Institute, MIT
7 Cambridge Center
Cambridge, MA 02412

Dear Drs. Holdren and Lander:

On April 19, 2010, thirty-four scientific societies representing the spectrum of behavioral and social sciences wrote to PCAST to make the case that children need to be equipped with a foundation in *all* sciences in order to address the challenges that they will face in this century. We write today to convey that we remain seriously concerned that the STEM education reform initiatives envisioned will fall short in important ways and perhaps fail to reach the very students that we all seek to engage in science.

We commend PCAST on identifying key areas for improving K-12 STEM education in the recently released report, *Prepare and Inspire: K-12 Education in Science, Technology, Engineering, and Math (STEM) for America's Future*. However, the PCAST report omits entire areas of science at the K-12 level, and we remain perplexed as to why PCAST specifically carved out the behavioral and social sciences as inappropriate for K-12 STEM education. We note specifically the paragraph in chapter 1 that states:

Box 1-1: What is STEM education?

"STEM education," as used in this report, includes the subjects of mathematics, biology, chemistry, and physics, which traditionally formed the core requirements of many state curricula at the K-12 level. In addition, the report includes other critical subjects, such as computer science, engineering, environmental science and geology, with whose fundamental concepts K-12 students should be familiar. The report does not include the social and behavioral sciences, such as economics, anthropology, and sociology; while appropriately considered STEM fields at the undergraduate and graduate levels, they involve very different issues at the K-12 level."

In that small space, PCAST expands the “traditional” boundaries for science education to include non-traditional areas in science. However, it also excludes other major scientific areas where the same case can and should be made. We write because the behavioral and social sciences belong in the K-12 curriculum as much as the other areas of science mentioned.

We raise this issue with you for the following reasons:

1. A principal purpose for the PCAST report was to identify ways to prepare and inspire *all* students to learn STEM. Excluding compelling areas of science and scientific phenomena limits the possibilities for engaging children and teaching them the scientific method.
2. A major goal of the report was to prepare a well-educated citizenry and workforce. We agree and reiterate that all children should leave elementary and secondary schooling with at least a rudimentary understanding of what it means to be human, live in a social world, and interface with an increasingly technologically-driven, resource-limited, global environment.
3. Similar to today, the next generation will face challenges that will be resolved only with a thorough understanding of what motivates human behavior. Developing a pipeline of bright students to tackle these problems is no less important than in any other area of science. Indeed, many of these students will be working across traditional boundaries, and efforts to integrate the sciences at all education levels will move this nation forward in significant ways.
4. Integrating core components of the behavioral and social sciences into a coherent vision of science is as important for the future of these children and our country as with any area of science. Science learning is likely to be most engaging and successful when the principles and methods of discovery embrace an exposure to all phenomena amenable to such inquiry.
5. This is the time. The opportunity to transform science education to reflect both the full richness of science and the grand challenges of the present and future is underway. Our children, indeed our nation, stand to lose with a narrow vision of science, and it may be a decade or more before the opportunity and momentum is there to make systemic changes.

Recognition of the importance of the behavioral and social sciences can be seen in numerous places throughout the federal government and at the National Academy of Sciences. PCAST even acknowledges these sciences as an important part of STEM, except at the K-12 level. It is simply not clear to those in our scientific communities why the behavioral and social sciences are not appropriate or “involve very different issues at the K-12 level,” especially given the reasons we cite above.

Therefore, we hope PCAST will reconsider its apparent exclusion of these sciences. Your correspondence may be sent to Paula Skedsvold at pskedsvold@fabbs.org and Felice Levine at flevine@aera.net who will share it with the leadership and scientists in the societies that join this letter.

Sincerely,

American Educational Research Association
American Political Science Association
American Psychological Association
American Sociological Association
American Statistical Association
Association for Behavior Analysis International
Association for Psychological Science
Association of American Geographers
Association of American Law Schools
Association of Population Centers
Behavior Genetics Association
Cognitive Science Society
Consortium of Social Science Associations
Federation of Associations in Behavioral & Brain Sciences
Human Factors and Ergonomics Society
International Society of Developmental Psychobiology
Law and Society Association
Linguistic Society of America
Massachusetts Neuropsychological Society
National Academy of Neuropsychology
National Communication Association
Population Association of America
Psychonomic Society
Rural Sociological Society
Society for Behavioral Neuroendocrinology
Society for Computers in Psychology
Society for Industrial & Organizational Psychology
Society for Judgment and Decision Making
Society for Personality Assessment
Society for Personality and Social Psychology
Society for Psychophysiological Research
Society for Research in Child Development
Society for the Psychological Study of Social Issues
Society of Experimental Social Psychology
Society of Multivariate Experimental Psychology

Cc: PCAST Members