

California Council on Science and Technology
The Arnold and Mabel Beckman Center of the National Academies
Friday, October 9, 2009

California and Federal S&T Issues – AAAS Perspective

Alice Huang opened by stating that she is sorry to be leaving the California Council, because it has been a very valuable experience. She learned from the Council about the many interesting and important problems that California faces. She also values the friendships she has made over these years.

As she looks forward to her future role as president of the AAAS beginning in February, 2010, she notes that the new position places her in the midst of a constant flow of national science issues with an inside-the-beltway view of science policy, as well as the hot issues in science. Because the AAAS membership includes about 160,000 members in the United States and world wide, the organization has considerable clout in Washington, D.C. AAAS thinks of itself as the academy of the people versus the national academy, which is a more elite organization. The broad membership of AAAS gives it a certain vitality that makes it quite exciting to be a part of. There is a great deal of activity going on at AAAS and much of it is behind the scenes. She highlighted a few activities that might have relevance to CCST.

John Holdren, the current presidential science advisor and former president of AAAS, mentioned while visiting at a recent AAAS Board meeting that the current administration has produced a remarkable confluence of scientists in Washington D.C. These scientists who are appointed heads of agencies or are sprinkled throughout government all know each other. Many are good friends and have worked together in the past. All have tremendous credentials. They hope that they will be able to really move science forward so that it can contribute effectively to the national welfare as well as to the world.

A major effort within the administration, as of January 2009, has been climate change and energy—an interest in California as well. The goal is to get a bill passed based on solid

science before the Copenhagen meeting planned for in December. The reason being, that the U.S. would like to demonstrate a strong commitment to climate change and the promotion of new energy ideas.

An international area of work for the AAAS is science diplomacy. AAAS has focused on countries in Africa, as well as Syria, North Korea and China. In Africa, it supports a Pan African structure similar to AAAS that provides an organizational focus for scientists that will sustain an indigenous training environment which, hopefully, will produce and encourage more scientists to remain in Africa rather than those who choose to emigrate. Besides cooperating in Africa, the science diplomacy focus has been on establishing contacts and identifying potential collaborations while maintaining dialogue even in the absence of diplomatic representation or exchange. Syria is an example of this effort. There was a meeting this spring at the top level, reaching into Syria's presidential office. There are science professionals there and several leaders with an appreciation for science and technology. It is a country that is very forward looking, progressive and much more friendly than other Islamic countries in that region. The same approach is being tried in North Korea, although there is not as much headway in establishing the contacts that AAAS would like to make.

There is an AAAS division called Center for Science, Technology and Congress, headed by Joanne Carney (Director). The Center keeps track of legislation, as it is introduced, so that AAAS can immediately get onto the bill, assess it for unintended consequences and determine its level of importance for the science community. Within 42-78 hours, the board can decide on a prepared statement representing AAAS' stand on the particular issue. In addition, letters including the statement are sent to all relevant offices that are involved in the legislation. AAAS offers to these offices assistance in helping to shape the legislation as it proceeds in the legislative process and to ensure that unintended consequences are carefully considered. From this office, AAAS issues a monthly alert, *Science and Technology in Congress* that members can subscribe to. For instance, the October issue discusses the Senate Climate Bill introduced by Sen. Barbara Boxer and Foreign Relations Chair John Kerry. The Clean Energy Jobs and American Power Act (S. 1733) bill sets targets for short-term reductions in greenhouse gas emissions at 20% below 2005 levels by 2020, compared to 17% in the House Waxman-Markey bill. The bill

draft does not specify how emissions allowances will be distributed, however. Committee consideration of the bill is expected in late October.

Another one of the alerts, that would be important for California's young people, includes unveiling of the new DOE initiated graduate fellowship program. Secretary of Energy Steven Chu announced that the DOE would award a total of \$12.5 million to support U.S. graduate students in the fields of science, mathematics and engineering. The fellowship would award each recipient \$50,500 per year for three years. Eligible students must be U.S. citizens and must be enrolled or be currently enrolled for 2010. This new program will support 80 students so it will be highly competitive. The deadline for the program is November 20, 2009. Huang commented that she was the beneficiary of the post-Sputnik fellowships so she appreciates the kind of fellowship that is now being offered. She commented that this was a generous amount of fellowship support for graduate training.

She talked about AAAS' Science & Technology Policy Forum that is offered every year during the month of April. The Forum is held in Washington D.C. and usually has approximately 500 attendees. Individuals come not only from the policy side, but also from the scientific side—and they cover all the areas of science. Huang commented that when she was dean at NYU, going to these policy meetings provided her with a wonderful overview of every field in science, the opportunities that exist, the needs, the challenges, and helped her become a much better academic dean. It is very valuable to attend these forums.

Science education has been a part of AAAS for many years, over 20 years with continuing NSF support. Many who have been involved in science education know the effort then called SMET education and realize that much has happened since. She recalled that she was one of the proponents for changing to the new acronym, STEM. When she talks about science education she includes all of the areas in STEM. AAAS provides many support materials and resources for science teachers/educators. There are reviews of suggested textbooks, innovative methods of teaching, and detailed steps on how to carry them out. AAAS, also, helps teachers in the correlation between content and standards of individual states. She reported that

Bruce Alberts is now part of AAAS, as he is the editor of *Science*. Much of the driving force (in education) of what was happening at the National Academies and NRC is now moving to AAAS.

The reform of science education has long been a goal of AAAS. The goal is largely based on the fact that every state has its own standards different from one state to another. The drive has been to ensure that there are national standards. However, there are arguments that national standards could also lead to unintended, undesired consequences. The push for national standards is an experiment worth trying since what we already have is not working very well. Every state except for Texas and Alaska has agreed to national standards in language arts and mathematics. A new review committee has been established to help review the old standards and help establish new national ones. The committee members are acknowledged experts, and are known to AAAS. It is anticipated that they will proceed in the right direction since they all have a long background in efforts to reform mathematics and language arts. The bad news is that science per se is not included in this reform effort. This area is fraught with potential problems from many stakeholders, not the least of which is the political problem surrounding the teaching of evolution. AAAS is a player in this initiative and will continue to provide support for teachers and push for reform. One of the latest reforms taking hold is a hard look at college freshman science courses, especially biology. They need to be changed in a way that is more effective in attracting and retaining students rather than existing as gatekeepers for selected students. Also, rather than being based on the memorization of facts, the approach should be based on broad concepts, understanding of how science is done and analyzed, and how data are interpreted.

Lastly, Huang reported that AAAS has a new journal that just made its debut, *Science Translational Medicine*. The chief scientific advisor is Dr. Elias Zerhouni, former director of the National Institutes of Health.

She concluded her presentation and remarked that she hoped to continue meeting many of the Council members as everyone continues to work together in science and policy.