President Obama’s National Space Policy

The Obama Administration recently released its National Space Policy and the document has key implications for science – including a refocusing of NASA (the National Aeronautics and Space Administration) as an earth science agency.

Among the Policy’s goals are: i) a pursuit of human initiatives to develop innovative technologies and enhance scientific discovery, and ii) a commitment to improve space-based Earth observation capabilities needed to conduct science, monitor climate and global change, manage natural resources, and support disaster response and recovery. These goals would seem to be especially well suited to the work of geographers at federal agencies and in the field.

The document also gives specific guidance to agencies that could be of interest to AAG members. Specifically, agencies are directed to conduct basic and applied research to strengthen U.S. leadership in space-related science and technology. The President also asserts the importance of maintaining and enhancing space-based positioning, navigation, and timing systems. The Policy indicates that the government will provide continuous worldwide access, for peaceful civil uses, to the Global Positioning System (GPS) and its government-provided augmentations, free of direct user charges as part of this goal.

Federal agencies are also directed to engage with foreign providers of global navigation satellite systems to encourage compatibility and interoperability. The government will also focus on ways to prevent harmful interference to GPS, increase the resilience of the System, and implement back-up systems.

The Policy makes a priority of developing and maintaining skilled scientific personnel in key departments, agencies, and commercial workforces. This includes fostering U.S. educational achievement in STEM (Science, Technology, Engineering, and Mathematics) fields. The AAG, of course, has been heavily involved in promoting geography in K-12 education policies – including through STEM initiatives.

The document also includes a section specifically directing NASA to “improve a broad array of programs of space-based observation, research, and analysis of the Earth’s land, oceans, and atmosphere.” This has been cited as a return to NASA’s focus as a leading Earth science agency – a priority that took a back seat under Bush Administration policy guidelines. Much of this section focuses on the need to enhance U.S. global climate change research and monitoring capabilities. NASA is directed to work closely with the National Oceanic and Atmospheric Administration (NOAA) in carrying out these goals.

The Policy includes guidance to NASA and the U.S. Geological Survey (USGS) regarding the importance of maintaining the government’s land remote sensing capabilities. The document specifically conveys the importance of conducting “research on natural and human-induced changes to Earth’s land, land cover, and inland surface waters.” The maintenance and distribution of the global land surface data national archive is another area of emphasis.

There can be no doubt that U.S. Space Policy is of critical importance to geography and AAG members. A large number of employees at NASA, NOAA, the USGS, and other critical federal agencies have backgrounds in geography or were trained at geography departments. Additionally, these agencies provide critical grant opportunities that geographers have taken advantage of to further their research. The complete document can be viewed at www.whitehouse.gov.

Geography Ignored in Obama Education Report

The President’s Council of Advisors on Science and Technology (PCAST) released Prepare and Inspire: K-12 Education in Science, Technology, Engineering, and Math (STEM) for America’s Future on September 15. It is the latest in a series of key reports focused on the future of K-12 science education in the United States. The document unfortunately fails to discuss the role of geography, GIS, geospatial technologies, or the social sciences as part of the science curriculum.

The chief recommendations of Prepare and Inspire are that the federal government should:

• Recruit and train 100,000 STEM teachers over the next decade – with a focus on these teachers’ abilities to prepare and inspire students;
• Recognize and reward the top 5 percent of the Nation’s STEM teachers by creating a STEM master teachers corps;
• Create 1,000 new STEM-focused schools over the next decade;
• Use technology to drive innovation, in part by creating an advanced research projects agency for education;
• Support the current state-led movement for shared standards in math and science.

The report suggests that these and other recommendations could be funded in part through existing federal programs – supplemented by funding from private foundations and corporations, the states, and school districts. Prepare and Inspire contains no direct mentions of the geographical sciences or of GIS education. This is similar to the Administration’s Blueprint on the Elementary and Secondary Education Act, which also did not include geography education. Furthermore, the report specifically notes that its definition of STEM fields “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.”

The White House Office of Science and Technology Policy (OSTP) administers PCAST – which is composed of 20 scientists and engineers. The co-chairs of the Council are environmental science and policy expert John Holdren, who concurrently directs OSTP, and biologist Eric Lander, who heads the Broad Institute of MIT and Harvard. Other PCAST members are economist and Yale President Richard Levin, Harvard geologist-environmental scientist Daniel Schrag, and Michigan ecologist Rosina Bierbaum.

John Wertman
jwertman@aag.org