

**The Henry A. Rowland Department of
Physics and Astronomy**

Bloomberg Center
3400 N. Charles Street
Baltimore MD 21218-2688
410-516-5419 / Fax 410-516-7239
bagger@jhu.edu

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The Honorable Charles Bolden
Administrator
National Aeronautics and Space Administration
Washington, DC 20546

Dear Administrator Bolden:

I write to you as Chair of the Space Telescope Institute Council (STIC), the group that oversees the Space Telescope Science Institute (STScI) for AURA. The STIC is composed of prominent scientists who have a broad base of experience relevant to STScI. Its members range from active astronomers to former directors of national laboratories.

The STIC supports the President's desire to increase the efficiency and effectiveness of the federal investment in science, technology, engineering, and mathematics (STEM) education. However, the STIC is concerned that the Administration's proposed STEM reorganization will dismantle the highly effective Education and Public Outreach (EPO) programs in NASA's Science Mission Directorate, of which STScI's program is but one example.

For almost twenty years, the discoveries from the Hubble Space Telescope have provided an unprecedented resource to inspire, engage, and educate students from diverse backgrounds in fundamental STEM concepts. As the science operations center for the Hubble Space Telescope, STScI has carried Hubble's research into classrooms across the nation. The departments of education in more than half the states have adopted STScI curricular materials, which underscores their impact and effectiveness. In fact, STScI materials are used by a half million teachers and six million students each year. Impact studies confirm that these products and programs achieve their intended outcomes. Hubble's outreach program is just as impressive, with an estimated 24 million people each year visiting *HubbleSite*.

Astronomy and space research have long been recognized as magnets that pull students into STEM fields. For that reason, STEM education has been at the core of the Hubble EPO program since its inception. Hubble's outreach team – embedded deeply within the mission – includes a full range of expertise, including scientists, educators, communicators, illustrators and technical specialists. STScI's strategic approach is to target middle school students – those students most vulnerable to abandoning future STEM careers – and to build and nurture a national network of partners and master teachers to achieve enormous reach. STScI's leveraging strategies have been proven to work, as described above, and are strikingly similar to three initiatives described in the

OSTP document, *Preparing a 21st Century Workforce: Science, Technology, Engineering and Mathematics (STEM) Education in the 2014 Budget* (April 2013).

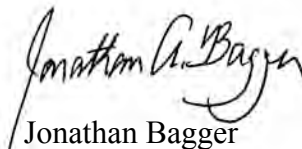
NASA's proactive approach to attracting students into STEM careers – particularly through its mission-led activities such as Hubble's – has proven to be very successful. In a recent survey of undergraduate engineering majors, nearly 20% identified NASA as their ideal employer, making NASA the most desirable employer for young engineering students (see <http://www.forbes.com/sites/jacquelynsmith/2013/06/12/the-dream-employers-for-engineering-students/>). Even more important, NASA's remarkable EPO programs inspire students to enter a host of STEM careers, not just at NASA, but in the private sector as well. The STIC holds that NASA's outstanding mission-led and mission-based EPO programs advance the President's goal of increasing the number, quality and diversity of students in STEM fields, and should remain within NASA.

The proposed restructuring would lead to the disbanding of a unique national resource, the education and outreach team at STScI. More than 20 talented professionals would lose their jobs. This team has worked for nearly two decades to promote NASA's premier science mission. It has successfully brought HST's discoveries into our national classrooms. The Hubble team is also working with NASA's next priority science mission, the James Webb Space Telescope, creating both formal and informal EPO activities aimed at attracting the next generation of scientists and engineers. If the plan is implemented, this effort will be lost.

We ask that you find a way to preserve the vital direct links between NASA-funded mission scientists and the students, teachers and public they serve. NASA has built an impressive national network that connects scientists, faculty from university STEM departments and colleges of education, STEM education professionals, K-12 educators and school-district policy makers. NASA's network is the envy of many other agencies within the Federal Government and the world at large. You have a jewel in your education program that needs to be polished – not destroyed.

Although I am not an astronomer or even a space scientist, I credit NASA with igniting my lifelong passion for science. I ask that you support NASA's mission-oriented EPO efforts so that future generations will have the same inspiration that you and I did. We owe it to our children and to the future of our great country.

Yours sincerely,



Jonathan Bagger

Krieger-Eisenhower Professor
Chair, Space Telescope Institute Council

cc: Dr. John Holdren

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