

AVIATION WEEK

& SPACE TECHNOLOGY

Dear Mr. President-Elect . . .

A Plea To Upgrade Education

Fifth in a series

Congratulations on being elected president of the U.S.—and for sharing with the American people your vision of opportunity for the future. Today, I write to you about the workforce of the aerospace and defense industry, about the hundreds of thousands of skilled engineers, scientists and others who help support our nation's security and our global economic competitiveness.

To do that, I need to talk about innovation. It is the lifeblood of our industry and of American industry. It is also a catalyst for national priorities you have enunciated, including economic revitalization and energy and infrastructure renewal. Tomorrow's innovation leaders are sitting in American classrooms right now, deciding whether it's worth spending an extra hour on their math and science homework, or even doing that homework. While our American students are certainly smart, passionate and creative, we clearly have some work to do to improve

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their interest and excellence in science, technology, engineering and mathematics (STEM)—foundational subjects that are the catalysts for innovation.

According to the U.S. government's National Assessment of Educational Progress

for 2007, only 39% of American fourth-graders and 32% of eighth-graders score at or above "proficient" in math. That is just not good enough. They and we, as the adults supporting them, can do better.

There is urgency to this challenge. A great generational transition is on the horizon for the aerospace and defense industry and for American industry. The Baby Boomers are babies no more. In the next two decades, almost 80 million Americans will become eligible for Social Security retirement benefits at a rate of more than 10,000 a day—seven Boomers every minute.

According to the AVIATION WEEK Workforce Survey published last year, 58% of employees in the U.S.-based aerospace and defense industry are over 50. It takes tremendous lead time to develop new generations of Americans with world-class skills in STEM areas. The future of the aerospace and defense workforce depends directly on the actions we take today.

The Business-Higher Education Forum and other organizations have articulated an urgency in having government and business quickly address this challenge. As vice chairman of BHEF and co-chairman of its STEM Initiative, I ask you to consider the following recommendations:

- That your administration make the future of our country's STEM workforce a priority. This includes ensuring that students have the necessary financial resources to enroll in STEM programs at two- and four-year post-secondary institutions.

•Make it a priority to support innovative and effective programs aimed at recruiting, retaining and renewing our K-12 math and science teachers. We need to direct resources to high-need schools, encourage alternative pathways to teaching, draw on the talent pool of retired STEM professionals and our returning troops, and encourage greater collaboration among teachers and STEM professionals from industry and government.

•Reauthorize and fully fund the Elementary and Secondary Education Act. We need a newly reauthorized ESEA that addresses its major shortcomings, including allocating sufficient resources to help struggling schools and communities.

•Place more emphasis on math, science and technology in our schools—especially in the critical middle school years. One important step would be to encourage greater use of “inquiry-based learning”—which

emphasizes skills and questioning over mastery of content—in classrooms and in out-of-school settings.

•Help K-12 and higher-education institutions collaborate to ensure that all students have the information and preparation to enroll and succeed in STEM programs at post-secondary institutions.

We know that industry must partner in this journey. We have an opportunity to invest not only funds, but also our expertise. Preparing the future STEM workforce is critical to our nation’s security and prosperity. Mr. President-elect, we pledge our support to you as partners in carrying out this important mission.

*Sincerely,
William H. Swanson
Chairman and CEO
Raytheon Co.*