The Need for Health and Biomedical Science Education Programs Aimed at Grades K–12 at the National Institutes of Health (NIH)

Health and biomedical sciences for grades K-12 are critical components of STEM education that help to ensure the nation’s capability to prevent disease and improve health. The proposed 2014 STEM education consolidation plan, however, eliminates K-12 health and biomedical science education from its traditional place in the portfolio of the National Institutes of Health (NIH), and, by default, from the national STEM education agenda. No other federal agency supports programs comparable to those that would be lost.

More than 65 NIH-funded, K-12 health and biomedical science education projects currently operate in 40 states. These include “in-person” programs for more than 82,500 K-12 students and 5,750 K-12 teachers each year, and online programs that reach more than 20 million K-12 students and educators annually. NIH-funded exhibitions at some of the nation’s largest museums and science centers reach millions more students, teachers and families. With emphasis on engaging underserved populations, K-12 educational initiatives supported by NIH create thoroughly evaluated, science-rich interactive exhibits, curriculum materials, teacher professional development programs, student and teacher research experiences, and out-of-school learning opportunities.

Ongoing NIH-funded K-12 educational programs benefit the nation in the following ways.

- **Improve preparation for, and access to careers** in medicine, healthcare, biotechnology and biomedical research, with a focus on students from under-represented groups.
- **Address health disparities** by increasing access to college and health professions careers for underserved students, who are more likely than their peers to practice in medically underserved areas.
- **Build public understanding and support of biomedical research** and clinical trials through educational programs that emphasize the relationship between NIH discoveries and their translation into positive health outcomes.
- **Encourage and facilitate involvement of biomedical research scientists** in K-12 STEM education, and engage the resources of colleges, universities, medical schools and science museums in supporting K-12 STEM education.
- **Promote health literacy and better decision-making** to address preventable health problems among America’s youth, reduce the burdens of chronic illnesses and infectious diseases, and enable consumers to make sense of genetic and other newly available health information.
- **Increase students' interest in STEM topics** through personally relevant examples from health and biomedicine that are aligned with recommendations of the Next Generation Science Standards.

For more than two decades, NIH has invested in the development of human capital and a unique infrastructure that is meeting our nation’s K-12 health and biomedical science education needs. These investments have produced significant, demonstrable outcomes that would not have been possible otherwise. Current K-12 programs sponsored by NIH, including the Office of Science Education, employ rigorous, results-oriented and cost-effective approaches to tackle major national issues, as listed below.

- **Jobs**: Healthcare and biomedical science are crucial elements of the economy. The US Department of Commerce estimates that healthcare accounts for $1.75 trillion in revenues and employs more than 14 million people (nine percent of the US workforce).
- **Provider Shortages**: The nation faces an acute shortage of healthcare workers in all areas, and the problem is expected to grow. The American Association of Medical Colleges projects that there will be a shortage of more than 90,000 physicians—including 45,000 primary care physicians—by the end of the decade. About 55 million people already lack access to a physician.
- **Wellness and Disease Prevention**: According to the Milken Institute, more than half of all Americans suffer from one or more chronic diseases, many of which are preventable. Healthcare spending is projected to reach almost 20% of the US gross domestic product by 2021. Racial and ethnic minorities suffer disproportionately from diseases such as cancer, diabetes and HIV/AIDS, but participate less frequently in programs that could help to reduce disparities.

**Without K-12 health and biomedical science education initiatives, our nation will be unable to solve many of its most pressing workforce, economic and healthcare problems.**