

BUILDING A GEOSCIENCE WORKFORCE

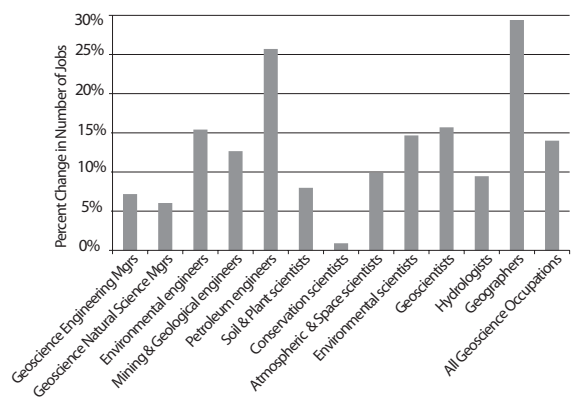
STEM (Science, Technology, Engineering, and Math) education is essential for economic growth and national security. STEM businesses are continually at the forefront of job creation and innovation, and their workers typically earn significantly higher incomes than those in other sectors. Investing in STEM and geoscience education will enable the nation to tackle society's toughest problems. Among the many challenges, unlocking new energy sources, understanding our changing world, and making

biomedical discoveries in the deep ocean while balancing the nation's funding needs will require literacy in science and math. As the U.S. moves toward a knowledge-based economy, we increasingly depend on workers with STEM backgrounds to provide us with a robust and qualified workforce able to compete on the global stage. For our country, for society, and for democracy, it is crucial that we invest in STEM and geoscience education.

INCREASING DEMAND

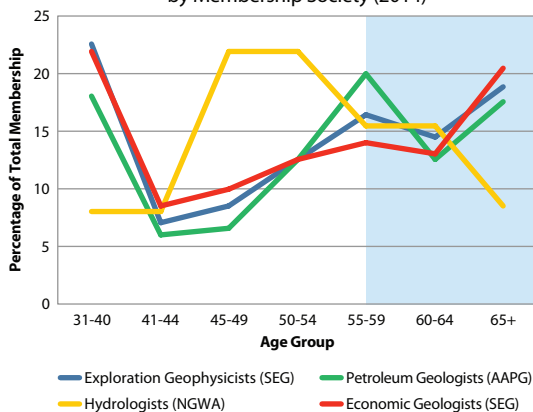
- 20%** of all U.S. jobs required a high level of STEM understanding in 2011.¹
- 26M** of U.S. jobs in 2013 required a high level of STEM understanding.¹
- 12.5%** projected growth of STEM jobs in the U.S. from 2012 to 2022.²
- 935K** projected new U.S. STEM jobs from 2012 to 2022.
- 14%** projected increase in U.S. geoscience jobs between 2012 and 2022.³
- 47%** of American geoscientists in the private sector are over the age of 55 in 2016 (shaded below), which makes them likely to retire within 10 years.⁴ It is 43% in the federal government.⁵

Employment Projections for Detailed Geoscience Occupations (2012-2022)³



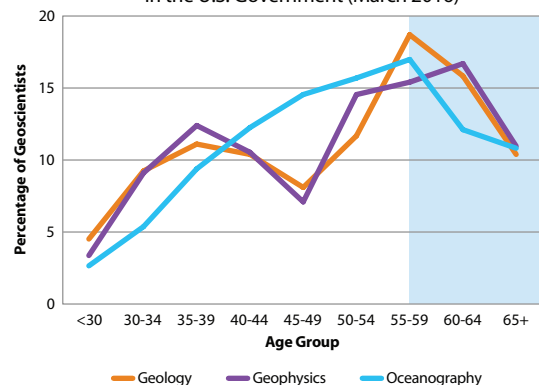
Private Sector⁴:

Age Distribution of Geoscientists by Membership Society (2014)



Federal Government⁵:

Age Distribution of Geoscientists in the U.S. Government (March 2016)



TO MEET THAT DEMAND

Need: More geoscientists in training

7,000 U.S. undergraduate geoscience degrees awarded annually from 1980-1985.⁶

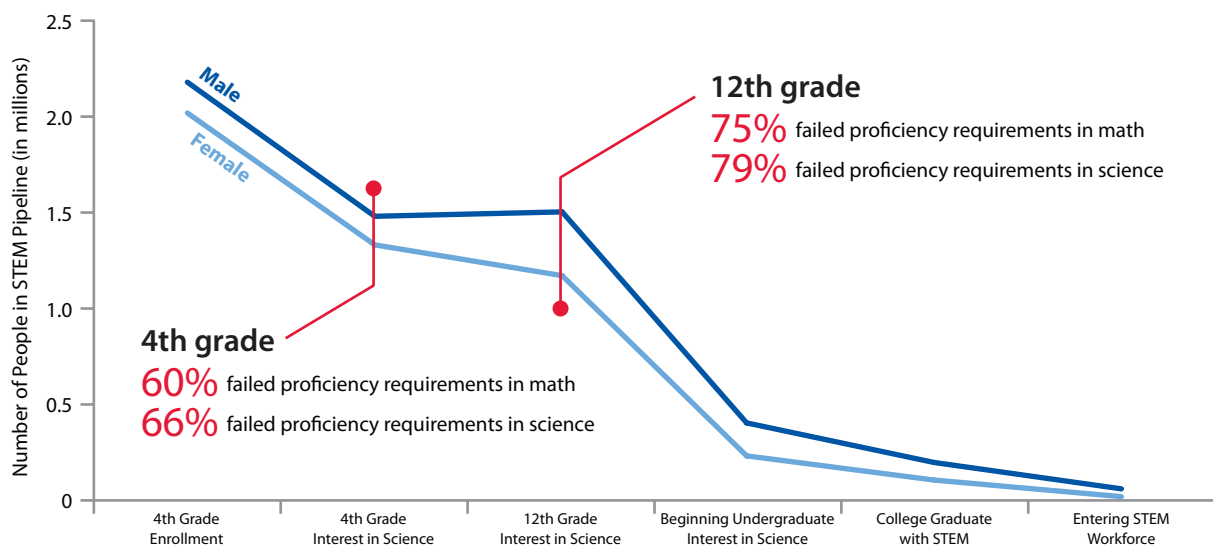
3,000 average annual undergraduate geoscience degrees awarded in the U.S. from 2000-2012.⁶

2,200 The maximum combined number of Masters and Doctoral geoscience degrees conferred in any year since 1990.⁶

Need: Better STEM education at all levels

Despite high childhood interest in science, very few students enter the STEM workforce.⁷

The *National Assessment of Educational Progress* identified startling percentages of U.S. school children did not meet proficiency standards in science or math from 2009 to 2015, with especially low scores from girls and minorities.⁸



\$4.3B annual U.S. federal funding for STEM training or education.¹

20% annual growth in research and development expenditure in China.⁹

4% of federal government funding for STEM education programs went toward engaging children in 2010.¹

References:

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