

**Space Grant National Infographic - 2023**  
**Science and Engineering Workforce Crisis Data Sources and Notes**

**1<sup>st</sup> bullet:** *U.S. FY 2022 federal space programs' budget totaled \$62 billion, NASA accounted for \$24 billion (38.7%).* Source: Statista, Government expenditure on space programs in 2020 and 2022, by major country, December 2022; <https://www.statista.com/statistics/745717/global-governmental-spending-on-space-programs-leading-countries/#statisticContainer>. Note: The United States government spent \$62 billion dollars on its space programs in 2022; of which, NASA accounted for \$24 billion. Global government expenditure for space programs in 2022 hit a record of approximately \$103 billion U.S. dollars.

**2<sup>nd</sup> bullet:** *U.S. projected employment growth of 10.8% in STEM occupations and 5.3% in All occupations, 2021–2031.* Source: Bureau of Labor Statistics, Employment Projections Program, Employment in STEM and non-STEM occupations, 2021 and projected 2031; <https://www.bls.gov/emp/tables/stem-employment.htm>. Note: STEM occupations include computer and mathematical, architecture and engineering, and life and physical science occupations, as well as managerial and postsecondary teaching occupations related to these functional areas and sales occupations requiring scientific or technical knowledge at the postsecondary level. STEM occupations do not include Health Sciences.

**3<sup>rd</sup> bullet:** *Global space industry record-high spending of \$469 billion in 2021; projected growth to \$634 billion by 2026.* Source: Space Foundation, Space Foundation Releases the Space Report, 2022 Q2, Showing Growth of the Global Space Economy, July 27, 2022; <https://www.spacefoundation.org/2022/07/27/the-space-report-2022-q2/>. Notes: • Global space economy grew 9% year-over-year in 2021, the fastest rate of growth since 2014. • Commercial space ventures accounted for 77% of spending. • More than \$224 billion came from products and services delivered by space firms in 2021, and nearly \$138 billion was spent on infrastructure and support for commercial space enterprises.

**4<sup>th</sup> bullet:** *Over 10,000 global space tech companies in 20 categories in 2021, U.S. had over 5,550.* Source: Forbes Senior Contributor, John Koetsier, Space Inc: 10,000 Companies, \$4T Value ... And 52% American, May 22, 2021; <https://www.forbes.com/sites/johnkoetsier/2021/05/22/space-inc-10000-companies-4t-value--and-52-american/?sh=add321555ac7>. Notes: • Global participants: 10,000+ companies, 5,000 significant investors, 150 research & development hubs, 130 governmental organizations. • U.S. has over 5,500 space-focused companies, almost ten times more than the UK, which has 615. • Among 20 business sectors, largest three are navigation and mapping, Cloud solutions, and Manufacturing. Primary data source is [SpaceTech Analytics](#).

**5<sup>th</sup> bullet:** *1,796 U.S. space launches in 2022, up from 287 in 2017; 2,136 global launches in 2022, up from 456 in 2017.* Source: United Nations Office for Outer Space Affairs, Online Index of Objects Launched into Outer Space (2023); [https://www.unoosa.org/oosa/osoindex/search-ng.jsp?lf\\_id=](https://www.unoosa.org/oosa/osoindex/search-ng.jsp?lf_id=). Notes: • Annual number of launches into space includes satellites, probes, landers, crewed spacecrafts, and space station flight elements launched into Earth orbit or beyond.

**6<sup>th</sup> bullet:** *Among U.S. 15-year-olds achieving highest academic proficiency levels in science or math, 27.8% of boys and 10.4% of girls expected to be STEM professionals at age 30.* Source: OECD's Programme for International Student Assessment. PISA 2018 Results, COMBINED EXECUTIVE SUMMARIES - VOLUME I, II & III, OECD 2019; <https://www.oecd.org/pisa/publications/pisa-2018-results.htm>. Notes: • PISA is a worldwide

study by the OECD in which 85 member and non-member countries take part. It is intended to evaluate and compare educational systems by measuring 15-year-old school pupils' scholastic performance on mathematics, science, and reading. • It was first performed in 2000, then repeated every three years. • The PISA 2021 assessment was postponed one year due to post-Covid difficulties. • PISA 2022 results are scheduled for release in December 2023.

***Space Grant Students, Space Grant Participants, Outreach, Diversity for Fiscal Year 2022:*** Source: NASA Office of STEM Engagement, written and verbal communication. Note: Performance metrics are submitted annually by each Space Grant state consortium to the NASA Office of STEM Engagement.