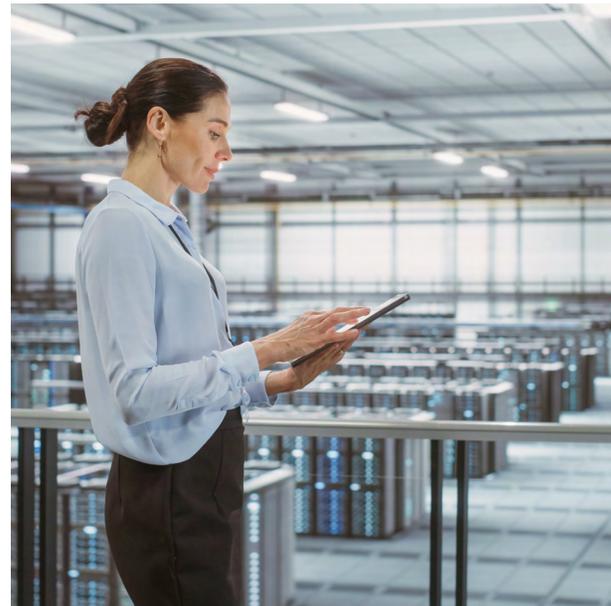




STATE OF THE FUTURE U.S. WORKFORCE

# Preparing students for the jobs of the future

Do students have the aptitudes to do the jobs of the future? Are they being exposed to these jobs? And how can we work together today to ensure we have the right talent supply for the future?





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## About the report

This report analyzes anonymized 2023 data from 540,000 middle and high school students across all 50 states. The data reveals top career cluster recommendations based on scientifically-backed aptitude assessment and interest measurements.

In this report, we outline our findings through several data points, including gender and race, and offer recommendations to help solve the growing exposure gap within in-demand career fields.



## INTRODUCTION

# Future workforce challenges

Over the next decade, the U.S. workforce is poised to undergo significant changes driven by accelerated advances in technology, education policy changes, and concerns about sustainability. What will not change is the need for a talent pipeline that is predictable, ready to work, and equipped with the right skills for the careers of the future.

Education, industry, government, community, and familial leaders must work together to ensure U.S. businesses and organizations have access to ready-to-work talent.

If this is to become a reality, it must start today and earlier than ever before. This means more focus on career readiness and industry-based influence, support, and guidance in the K-12 educational system.

While there have been strides to prepare students for future employment as early as elementary and middle school, more is required at all levels. If we fail to help students understand, explore, experiment, and consider a broader set of careers, the only certainty is there will be shortfalls in qualified talent. If a sustainable talent pipeline isn't realized, the U.S. economy could sputter, industries could collapse, and the automation of jobs could continue.

This report is a predictor of future workforce challenges. We use our own anonymized, proprietary data collected across thousands of schools in the U.S. to explore areas of vulnerability, opportunity, and concern in several at-risk industries.

As leaders consider these implications, we hope to galvanize all parties to work together to solve these real problems together to ensure students are being prepared for the workforce of tomorrow, today.





# About this report

This report reflects the data analysis of 540,000 middle and high school students nationwide. Utilizing a computerized variation of the Ball Aptitude Battery (BAB), the Interest Profiler Short Form (IPSF) developed by the National Center for O\*NET Development, and AI-powered algorithms, the assessment results identify best-fit career matches for each student.<sup>1</sup>

## Aptitude

is defined as an individual's natural ability to learn or perform in given areas. Knowing aptitudes is a powerful accelerator that helps individuals lean into their natural gifts and find success.

## Interest

is self-reported activities someone wants to know or learn about. They can change over time and rely on exposure.

## Exposure gap

is the difference between a student's aptitudes and their interests. This gap shows students have not been exposed to careers in which they might have a best fit. Therefore, students may struggle to find fulfillment, may incur additional costs in postsecondary education as they figure out their path, and likely will miss out on high-demand opportunities where they could thrive.



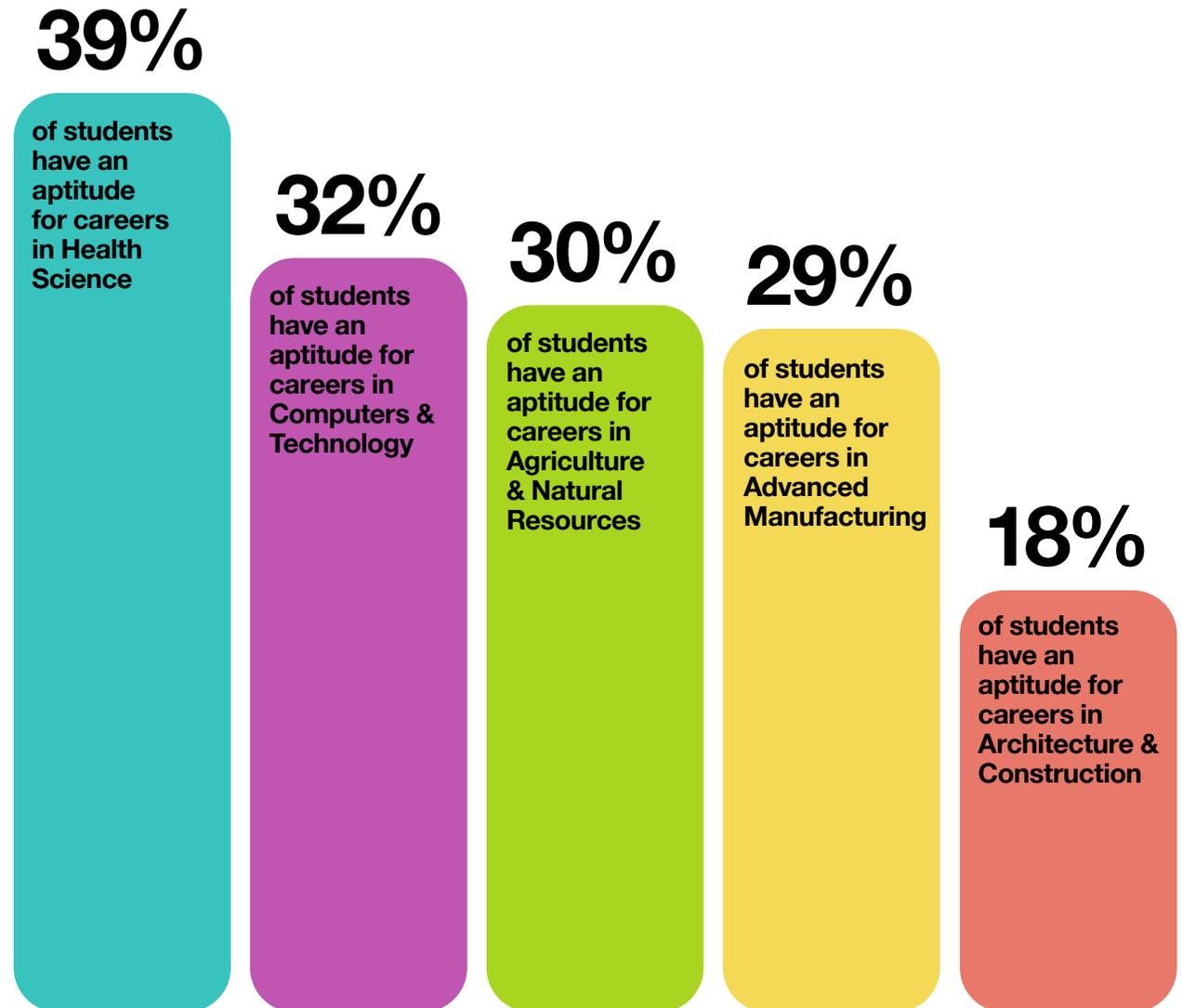


# In-demand careers & student aptitudes

Based on our analysis of 540,000 data points, students have the aptitudes to be successful in these in-demand careers.

These numbers show an optimistic outlook for future economic opportunities because significant numbers of students have the aptitudes to be successful in careers vital to economic growth.

The issue, as you'll see throughout this report, is student interest in these careers is low.





# Health Science

Employment in healthcare occupations is projected to grow much faster than the average for all occupations. There is currently a national nursing shortage, and with the millions from the Baby Boomer generation planning to retire in the coming years, there is a desperate need to fill the Health Science pipeline. The median annual wage for healthcare practitioners and technical occupations was \$77,760.<sup>2</sup>

## Predicted talent demand:

High

## Predicted talent shortfall:

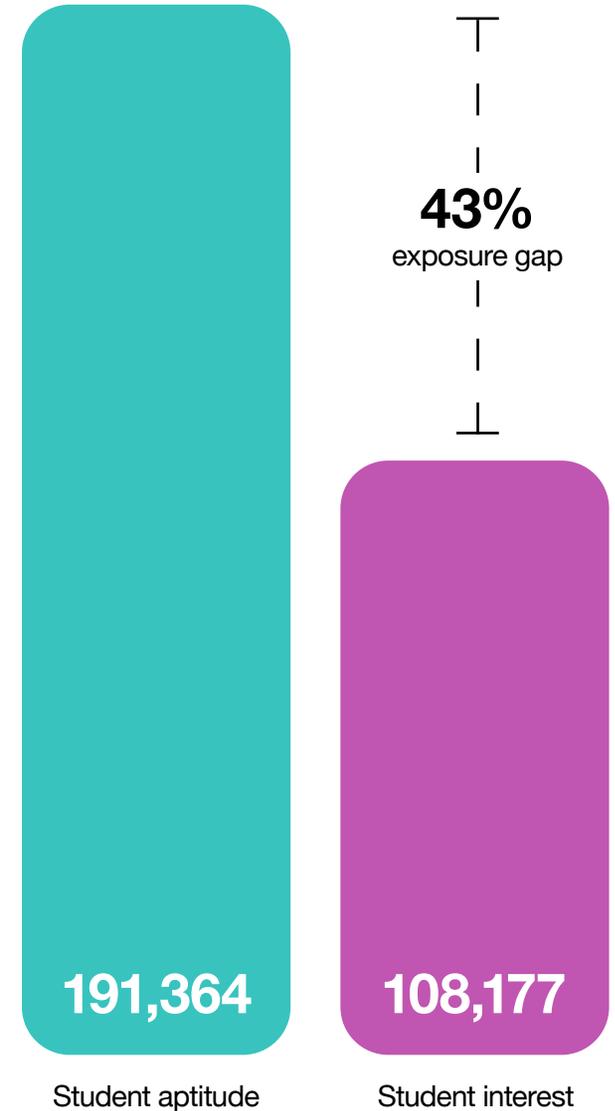
High

## Expected job growth:

The healthcare and social assistance sector is projected to add about 2.1 million jobs from 2022 to 2032, the most of any sector and about 45% of all new jobs.<sup>2</sup>

## Example careers:

Biotechnology, dental assistant, sports medicine, medical forensics, nursing assistant, physical therapy.





# Computers & Technology

Computers & Technology careers are expected to continue to grow nationally. Overall employment is projected to grow much faster than the average for all occupations, about 377,500 openings are projected each year, on average. Median annual wages for these careers is \$100,530 in May 2022.<sup>3</sup>

## Predicted talent demand:

High

## Predicted talent shortfall:

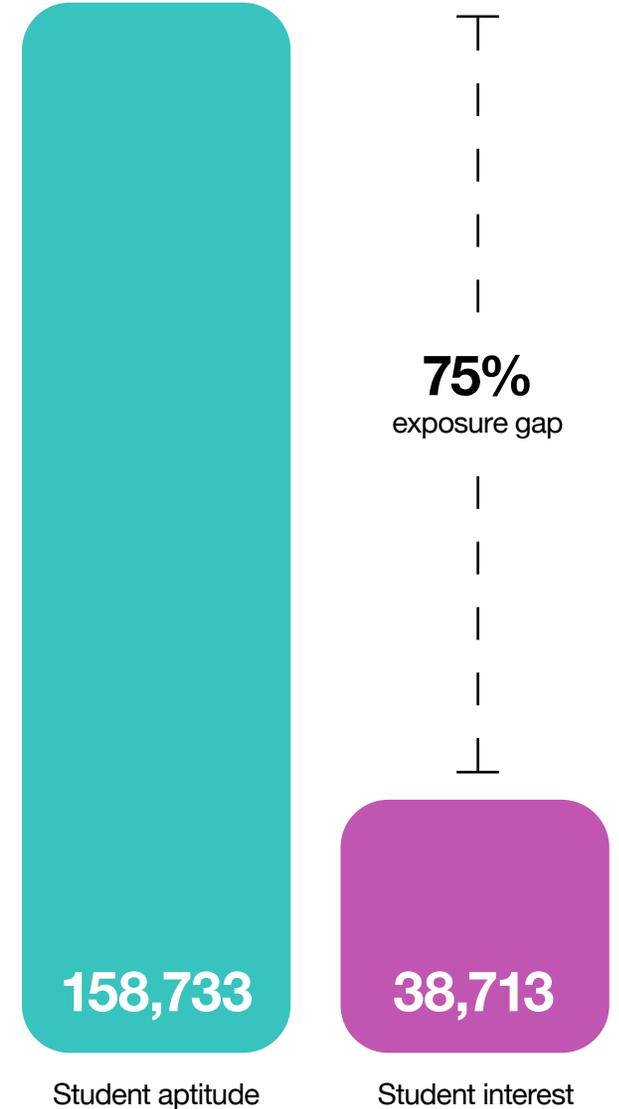
High

## Expected job growth:

There were nearly 10 million workers in STEM occupations<sup>4</sup> in 2021, and by 2031, that number is expected to increase by approximately 11%, two times faster than the total for all occupations.

## Example careers:

Computer systems analyst, web developer, computer programmer, software developer, information security analyst, cyber security analyst, aerospace engineering.





# Agriculture & Natural Resources

The Agriculture & Natural Resources career field is responsible largely for the production and safety of our food, water, natural resources, and wildlife. The median salary range for careers in this field is \$74,940.<sup>5</sup>

## Predicted talent demand:

High

## Predicted talent shortfall:

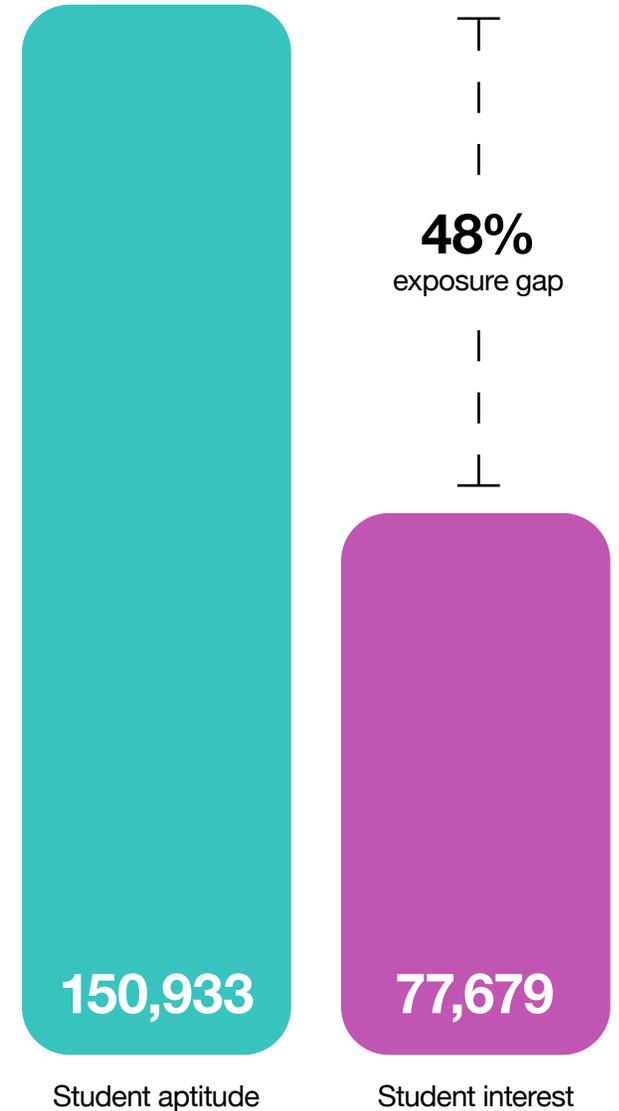
High

## Expected job growth:

Employment is projected to grow 6% from 2022-2032, and an average of 3,000 openings<sup>5</sup> for agriculture and food scientists are expected each year over the next decade.

## Example careers:

Environmental service system manager, agricultural commodity broker, environmental compliance inspector, farm manager, rancher, agricultural technician, animal scientist.





# Advanced Manufacturing

United States manufacturing is one of the primary drivers of the economy and, alone, would rank as the eighth-largest economy in the world. In 2022, the average salary was nearly \$99,000, and in November 2023, there were a staggering 547,000 manufacturing job openings.<sup>6</sup>

## Predicted talent demand:

High

## Predicted talent shortfall:

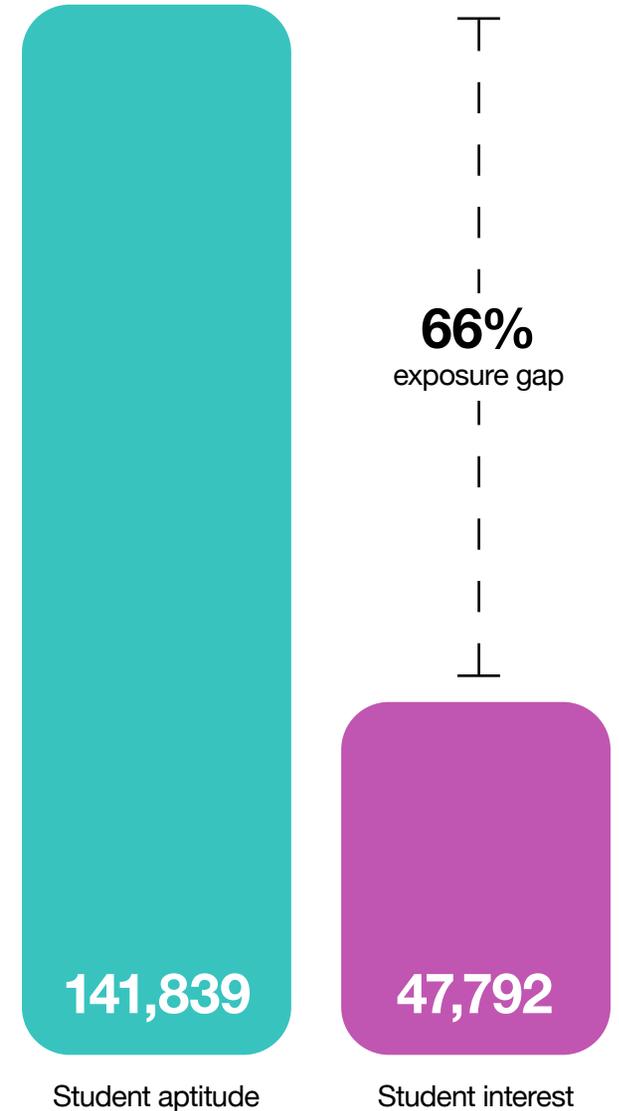
High

## Expected job growth:

Experts anticipate four million new jobs by 2030.<sup>7</sup> However, they also anticipate that approximately half of those jobs will go unfilled<sup>8</sup> due to a shortage of workers.

## Example careers:

Industrial engineers, electrical engineers, mechatronics engineers, machinists, welders, manufacturing technicians, quality assurance operators.





# Architecture & Construction

The need for more housing will contribute to the overall growth of the construction industry, which, in North America, is expected to grow by 32% between 2020 and 2030 or \$580 billion to \$2.4 trillion.<sup>9</sup> The median salary ranges for careers in this field range from \$82,840 for architects<sup>10</sup> to \$112,790 for construction managers.<sup>11</sup>

## Predicted talent demand:

High

## Predicted talent shortfall:

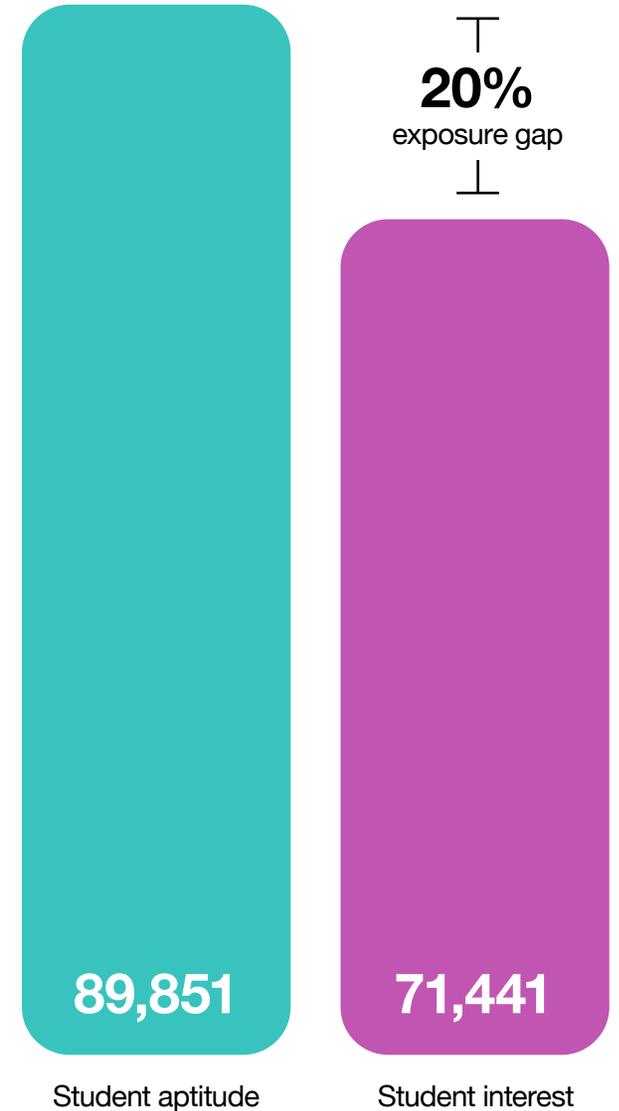
Medium — High

## Expected job growth:

Career openings are projected to grow 5% for both architects<sup>12</sup> and construction managers<sup>13</sup> by 2032. Job postings for construction have nearly doubled since 2017, but new hires have only increased by less than 10%.<sup>14</sup>

## Example careers:

Architects, construction managers, electricians, carpenters, plumbers and pipefitters, cost estimators, interior designers, millwrights, welding.





# Overcome bias with aptitudes

Students of all genders and ethnicities have the necessary aptitudes to be successful. Many don't pursue these opportunities because of explicit/implicit biases:

- 1. Lack of exposure and insufficient levels of representation:** For example, a female student may not be interested in a career in computer science because she doesn't see other women in that role.
- 2. Poor planning tools:** Interest surveys are often used to select careers and can be a risky choice since students are only interested in what they know. It's important to broaden their knowledge and show best-fit pathways based on their aptitudes instead.
- 3. Misguided guidance:** Students are not encouraged to consider careers due to outside influences. For example, a male student may be told to pursue a career in law enforcement instead of nursing.

## Female students

87%

more female students have an aptitude for careers in **Computers & Technology** than interest

87%

more female students have an aptitude for careers in **Advanced Manufacturing** than interest

30%

more female students have an aptitude for careers in **Health Science** than interest

## Male students

60%

more male students have an aptitude for careers in **Computers & Technology** than interest

49%

more male students have an aptitude for careers in **Advanced Manufacturing** than interest

54%

more male students have an aptitude for careers in **Health Science** than interest

## Black students

47%

more Black students have an aptitude for careers in **Computers & Technology** than interest

73%

more Black students have an aptitude for careers in **Advanced Manufacturing** than interest

63%

more Black middle and high school students have an aptitude for careers in **Health Science**

## Hispanic students

69%

more Hispanic students have an aptitude for careers in **Computers & Technology** than interest

72%

more Hispanic students have an aptitude for careers in **Advanced Manufacturing** than interest

54%

more Hispanic students have an aptitude for careers in **Health Science**



# What's the solution?

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All of the data presented in this report tells a similar story, and that is: students have the aptitudes required for in-demand careers, but they lack exposure to emerging opportunities.

What's needed is a more personalized pathway, one that allows for aptitude discovery and matches them to education and career opportunities. There needs to be more of an emphasis placed on certifications that can guide students to fulfilling careers that will be available when they graduate and well into the future. We suggest the following solutions:

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- **Aptitude and interest assessments** help students discover their best-fit postsecondary education and career pathways.
- **Collaborative planning** between family and educators, including counselors, allows students to apply their guidance and knowledge of their own aptitudes to plan courses, obtain beneficial certifications in industry pathways by completing specific CTE course offerings, and be better prepared to either enter the workforce or pursue postsecondary education and training in fields best suited to their talents/skills and passions.
- **Interdisciplinary teaching** in which schools and districts work together in a teaming model to create personalized pathways through sequenced and integrated programs of study through the lens of relevant career clusters.
- **Career-Connected Learning** helps students connect learning to the real world. Many programmatic approaches can be implemented on the state and local levels.
- **Education-to-career tools** aid counselors and teachers in creating personalized plans for postsecondary education and training based on student aptitudes and interests.
  - See how Alabama educators connect students to industry with YouScience [\(video\)](#)<sup>15</sup>
- **Industry-recognized certifications** quantify student knowledge and skills.
- **Work-based learning, internships, and apprenticeships** connect students with business and industry partners to gain real-world work experience.



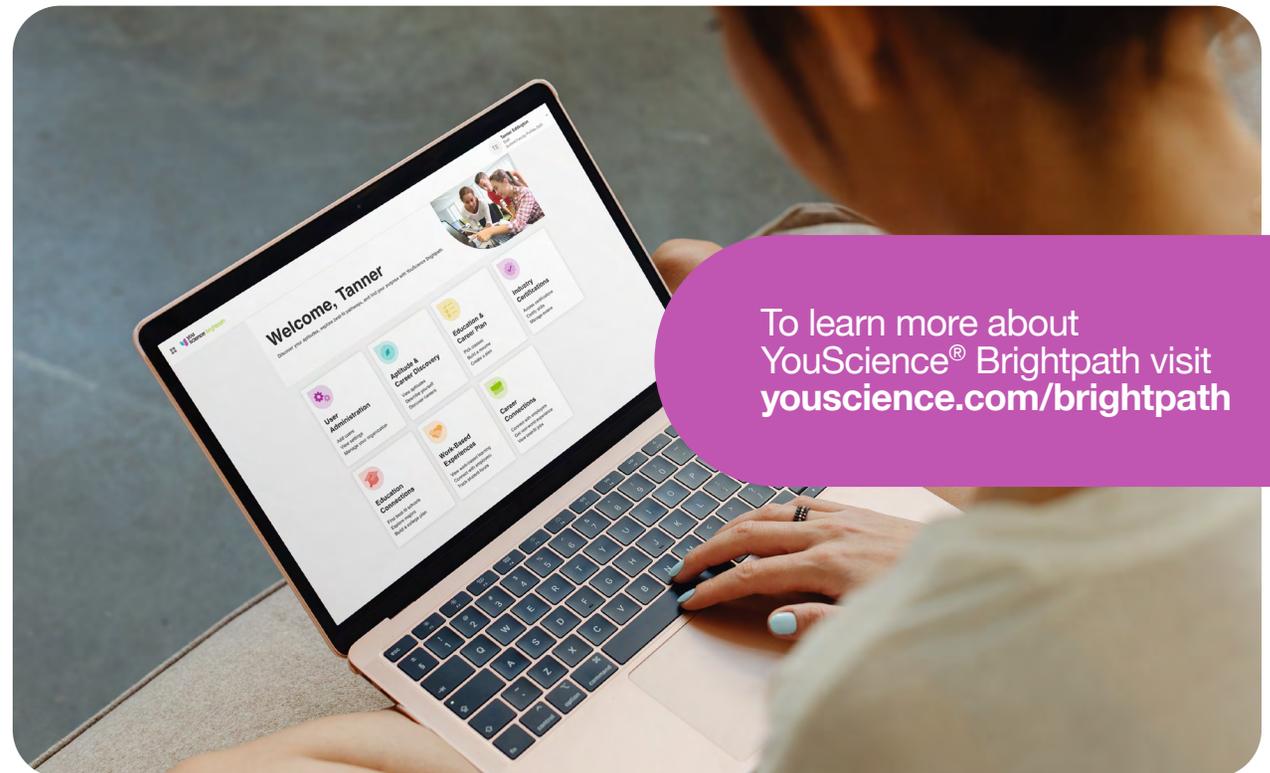


# About YouScience

**YouScience® is the leading technology provider dedicated to solving the skills and exposure gap crisis for students and employers. Its end-to-end platform, YouScience® Brightpath, connects education with career applications designed to help students unlock their potential for future pathways.**

YouScience leverages proven research, artificial intelligence, and industry input to help individuals identify their aptitudes, validate their skills and knowledge, and get matched with real-world educational and career pathways in high-demand occupations.

YouScience is the preferred choice of individuals, parents, educators, and counselors to guide and support educational and career pathways, currently serving more than 7,000 educational institutions and millions of users nationwide.





<sup>1</sup> [https://resources.youscience.com/rs/806-BFU-539/images/Discovery\\_TheScienceBehindYouScience\\_Report.pdf?version=0](https://resources.youscience.com/rs/806-BFU-539/images/Discovery_TheScienceBehindYouScience_Report.pdf?version=0)

<sup>2</sup> <https://www.bls.gov/ooh/healthcare/home.htm>

<sup>3</sup> <https://www.bls.gov/ooh/computer-and-information-technology/home.htm>

<sup>4</sup> <https://blog.dol.gov/2022/11/04/stem-day-explore-growing-careers>

<sup>5</sup> <https://www.bls.gov/ooh/life-physical-and-social-science/agricultural-and-food-scientists.htm>

<sup>6</sup> <https://corporate.lowes.com/newsroom/press-releases/60-companies-led-lowes-unite-launch-generation-t-movement-fill-skilled-trades-gap-expected-reach-3-million-job-vacancies-2028-04-25-19>

<sup>7</sup> <https://nam.org/facts-about-manufacturing-expanded/#workershortage>

<sup>8</sup> <https://www2.deloitte.com/us/en/insights/industry/manufacturing/manufacturing-industry-diversity.html>

<sup>9</sup> <https://www.oxfordeconomics.com/resource/future-of-construction/>

<sup>10</sup> <https://money.usnews.com/careers/best-jobs/architect/salary>

<sup>11</sup> <https://www.bls.gov/oes/current/oes119021.htm#nat>

<sup>12</sup> <https://www.bls.gov/ooh/architecture-and-engineering/architects.htm>

<sup>13</sup> <https://www.bls.gov/ooh/management/construction-managers.htm>

<sup>14</sup> <https://www2.deloitte.com/us/en/pages/energy-and-resources/articles/future-of-construction-industry.html>

<sup>15</sup> [https://www.youtube.com/watch?v=llvBllw6\\_2M](https://www.youtube.com/watch?v=llvBllw6_2M)