# GEORGIA PATHWAYS

### MAGAZINE

## Developing Skills that Employers Value

For students to prepare for the workforce, it is important for them to develop an understanding of academic knowledge and apply it effectively. Conceptual knowledge is undoubtedly important, but it alone isn't sufficient for young adults to thrive in a rapidly changing work environment. Georgia is forecasted to create another 100,000 jobs by 2033, and to be ready to seize these opportunities, students should focus on more than just their academic studies. According to a 2023 survey, employers most highly value a candidate's problem-solving abilities, teamwork skills, and flexibility/adaptability. To become highly sought-after candidates, students should consider ways they can strengthen these skill sets.

Thinking Critically: In today's competitive job market, possessing technical expertise alone is often not enough to stand out. In the survey above, nearly 90% of employers indicated they seek evidence of a student's problem-solving ability. Critical thinking is the foundation of problem-solving, creativity, and decision-making. It allows individuals to analyze information or situations, challenge assumptions, and make well-informed choices. In a world driven by data and technology, thinking critically will be essential for navigating challenges and identifying opportunities.

Soft Skills: Equally important are soft skills. Effective communication, collaboration, and creativity are key in a professional setting. Projects in the workplace often require collaboration across disciplines, so students should build strong teamwork and leadership abilities. Look for opportunities to lead group projects, participate in internships, or join clubs where communication and cooperation are essential.

Stay Curious and Continuously Learn: Remember to stay curious and keep learning continuously. Being adaptable and open to expanding your knowledge and skill set is crucial for success in the workforce. Just like students, professionals also need to keep learning and improving. Lifelong learning also helps build resilience, helping ensure you stay relevant and competitive as the workforce changes. This mindset can help you take advantage of new opportunities and succeed in dynamic, fast-paced technology careers like artificial intelligence.

As employers increasingly prioritize problem-solving, teamwork, and adaptability, students can focus on strengthening these vital skills to become well-rounded candidates. By honing these skills and staying adaptable, students can position themselves as highly sought-after candidates, ready to excel in a rapidly changing work environment.

Larry K. Williams
President
TAG / TAG-Ed

Larry K. Williams serves as the President and CEO of the TAG and the TAG Education Collaborative. TAG-Ed's mission is to strengthen Georgia's future workforce by providing students with relevant, hands-on STEM learning opportunities by connecting Technology Association of Georgia (TAG) resources with leading STEM education initiatives.

# Preparing The Future Workforce

By Wayne Carley

*"The best prepared will succeed
more effectively."*

None of us can know with any certainty what the world will look like in 2030 in light of the possible outcomes that will certainly evolve over the next ten years due to the impact of automation, megatrends, artificial intelligence, and machine learning. Certain industries will be impacted to a greater extent if they are poised for alternative methods of production, such as the long-shore-man's recent strike that opposed replacing people with machines to unload container ships.

As the nature of work evolves at an ever-accelerating pace, potential workers will need to be prepared to adapt to constant change. To maintain relevance as a necessary employee, they will need to be lifelong learners, adjusting to shifting workplace demands and job responsibilities, and continuously engaging in professional development

and the acquisition of new skills. We must confront the challenge of reimagining our educational systems to address the needs and demands of the current and future economy.

Our students must be encouraged to consider pursuing a variety of career fields with a diverse array of skills so that they can adapt to changes quickly as they change their minds and industry changes its path. With this in mind, the greatest volume of employees in the U.S. fall under a services umbrella such as nursing, teachers, military service, retail sales and related occupations.

These may be less impacted by automation, A.I. and machine learning, and often require less education and time to prepare for these career roles. These are certainly vital to our way of life and have always been of interest to our future workforce in the past and should not be ignored or down-played.

The geographical region and its primary industries should be considered, as these may determine the level of impact on the future workforce. Today's demands on employees will likely be very different than tomorrows….thus the critical need for continuing education. Our future workforce is currently in middle school, and for the most part, has no concept of career realities, what they want to do or how to prepare.

Playing catch-up in High School or early college years is the current condition, and fortunately, our young people are showing an impressive ability to learn and adapt based on their interests, and not necessarily on our economic needs. We are reminded of the advice, "just follow your dreams and do what you love." What if their dreams don't include our current workforce shortages, pending industry innovations with an ill prepared workforce or critical economic factors that require a vast, equipped crowd of applicants?

Because marketplaces and communities are now global, we must internationalize curriculum across disciplines in order to prepare the workforce of tomorrow to make decisions that are inclusive of diverse perspectives and experiences and to take action around issues beyond traditional borders. Postsecondary education, and, in particular, community and technical colleges, can and should be part of the process of preparing the future global workforce and citizenry.

Career and technical education (CTE) programs critical to the training and up-skilling of the workforce, community and technical college administrators and faculty should include CTE programs as a critical part of the preparation and transition to globalized learning experiences.

Continuing support and creation of community and technical college CTE programs that offer opportunities for students to gain the skills of global competence will generate highly sought-after graduates to fill key jobs in sectors with a strong potential for growth in the next decade.

These graduates will acquire the skills necessary to adapt to increasingly diverse demographic shifts, boost the economy on the state and national levels, and solve problems of global significance. Ultimately, global education and CTE programs seek to meet the same objective: to prepare students for the emerging global workforce regardless of what they decide to pursue.

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# The Transformative Power of STEM Education:
## A Vision for the Future and the Role of Experiential Learning

by Susan McBride

In today's rapidly evolving world, the importance of STEM education cannot be overstated. As we stand on the brink of unprecedented technological advancements and scientific discoveries, it is imperative that we equip the next generation with the skills and knowledge necessary to navigate and shape the future. This is where the true power of STEM education lies—not just in the subjects themselves, but in the broader vision they represent for innovation, problem-solving, and global progress.

### The Imperative of STEM Education

STEM education is more than a curriculum; it is a framework for developing critical thinking, creativity, and resilience. These disciplines teach students how to approach complex problems, analyse data, and develop solutions that can have a profound impact on society. In an age where artificial intelligence, biotechnology, and renewable energy are transforming industries, the ability to think scientifically and technologically is invaluable.

However, the challenge lies not just in teaching these subjects, but in making them accessible and engaging for all students. This requires a shift from traditional rote learning to experiential, hands-on education that brings STEM concepts to life. By doing so, we can inspire a diverse range of students to pursue careers in these fields, thereby fostering a more inclusive and innovative future.

### Experiential Learning: The Heart of STEM

Experiential learning is at the core of effective STEM education. It moves beyond textbooks and lectures, allowing students to engage directly with the material through experiments, projects, and real-world applications. This approach not only deepens understanding but also ignites curiosity and

passion.

Consider the impact of a student visiting a cutting-edge research facility, participating in a robotics competition, or engaging in a space mission simulation. These experiences provide tangible connections to abstract concepts, making learning both meaningful and memorable. They also highlight the interdisciplinary nature of STEM, showing students how science, technology, engineering, and mathematics intersect in the real world.

### The Role of Educational Travel

Educational travel plays a pivotal role in bringing STEM education to life. By taking learning beyond the classroom, students can experience firsthand the applications and implications of STEM in various contexts. Educational travel offers unique opportunities for students to visit research institutions, engage with industry professionals, and participate in hands-on workshops that deepen their understanding and appreciation of STEM.

For example, a trip to a renowned science museum or a visit to a leading technology company can provide students with insights into the latest advancements and innovations. These experiences not only enhance their knowledge but also inspire them to think about their future careers and the impact they can have on the world.

### Bridging the Gap: From Classroom to Career

One of the key challenges in STEM education is bridging the gap between classroom learning and real-world application. Students often struggle to see the relevance of what they are learning

to their future careers. This is where educational travel can make a significant difference.

By collaborating with businesses, research organisations, and government agencies, schools can provide students with internships, mentorships, and project-based learning opportunities. These experiences not only enhance students' understanding of STEM concepts but also give them a glimpse into potential career paths.

Moreover, they help students develop essential soft skills such as communication, teamwork, and problem-solving, which are crucial for success in any field.

## Inspiring the Next Generation

Inspiring the next generation of STEM leaders requires more than just education; it requires a vision for the future. We must show students the incredible possibilities that STEM holds, from curing diseases and exploring space to developing sustainable technologies and solving global challenges.

This vision must be inclusive, ensuring that all students, regardless of background, abilities or gender, have the opportunity to pursue their interests in STEM. Diversity in STEM is not just a matter of equity; it is essential for innovation. Different perspectives bring new ideas and solutions, driving progress in ways that homogeneity cannot.

## The Future of STEM Education

Looking ahead, the future of STEM education is bright, but it requires a concerted effort from all stakeholders - educators, institutions, industry, and policymakers. We must continue to push the boundaries of what is possible, leveraging new technologies and methodologies to enhance learning.

Virtual and augmented reality, for example, offer exciting possibilities for immersive learning experiences. Artificial intelligence can provide personalised learning pathways, helping students master complex concepts at their own pace. Online platforms can connect students with experts and peers from around the world, fostering a global community of learners.

## Conclusion

STEM education is not just about preparing students for jobs; it is about preparing them for life. It equips them with the skills and mindset needed to tackle the challenges of the 21st century and beyond. By fostering a love for discovery and innovation, we can inspire the next generation to not only participate in the future but to shape it.

As we move forward, let us embrace the transformative power of STEM education. Let us create learning environments that are dynamic, inclusive,
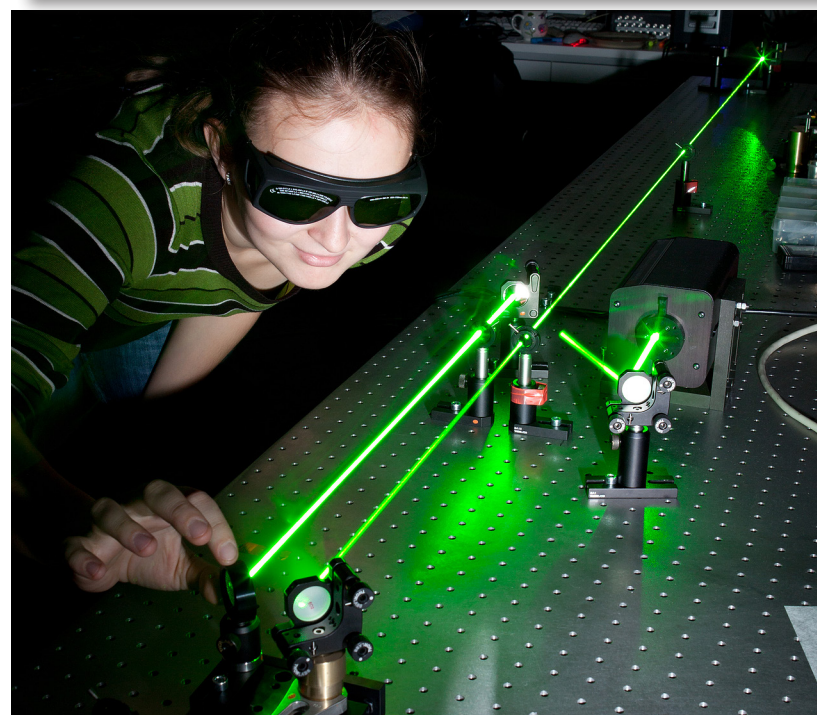
and inspiring. And let us work together to ensure that every student has the opportunity to reach their full potential and contribute to a better world. Educational travel is a powerful tool in this mission.

By providing students with real-world experiences and exposing them to the wonders of STEM, we can ignite their passion for learning and inspire them to pursue careers that will shape the future. Whether it's exploring the wonders of space at a NASA Space Camp, conducting experiments in a cutting-edge research lab, or engaging with leading scientists and engineers,



educational travel offers students a unique opportunity to learn, grow, and be inspired. By investing in these experiences, schools can help their students develop the skills and knowledge they need to succeed in the ever-evolving world of STEM.

# The STEM Of Being A Quarterback

By Wayne Carley

*C*omplex math such as physics and geometry are used in almost every play without forethought. As a ball carrier runs down the field, defenders pursue him while subconsciously making speed estimations (physics) and required adjustments to pursue and overtake as well as geometric estimations to calculate the angle of pursue needed to intercept the runner. Each player on the defense is using geometry every play, but may have never considered that.

The quarterback and pass receiver use physics, trigonometry and geometry every time a pass is thrown or a receiving route run. Once again, a player need not have taken a physics or trigonometry class to successfully execute the math in an instant so there must be an instinctual ability to use these complex mathematics applications.

The evidence seems to suggest there is. Yet, ask a player if they need or enjoy math, they are likely to say "no, I have no interest in math" or "I hate math". This is so interesting.

Here is a simple example of STEM skills within a typical pass play:

● Each receiver for each play has a pre-determined path to follow, usually at a predetermined speed or combination of speeds.

● The quarterback has knowledge of all receiver's (1-6) assigned paths, distances, speeds and destinations at a point on the field. This is play accumulated knowledge or the definition of science; **the S in STEM**.

● As the play unfolds, the quarterback must instantly, visually, evaluate how the "routes" are progressing, who is open or will soon be open.

● Based on these instantaneous evalu-

ations he must employ the engineering method (**the E in STEM**) to decide each probable out-come for each receiver that moment if he should decide to throw the ball to them. He then makes what he thinks is the best decision in that moment.

● The quarterback, using physics, must determine the amount of energy required to throw the football the necessary distance to the receiver chosen.

● The quarterback, using trigonometry and geometry, then instantly calculates the height, arch shape and triangulation calculations to hit the target, which I might add is probably moving in 2 or even 3 dimensions at speed. He then executes his calculations in the throw. **It all happens in 2.5 seconds.**

● The receiver visually evaluates the flight of the ball and instantly interprets the math formula the quarterback has chosen and determines if his "route" or path will intersect with the ball flight.



● Based on his evaluations, the receiver decides if it is necessary to adjust his path, speed and possible height to intersect the fall flight and hopefully catch the football.

● In addition, the receiver must evaluate the play of the defender to determine if they will interfere with the calculations he has made and once again adjust accordingly.

● The pass defender is also evaluating the math of the football flight to determine the best course of action to take to prevent the successful completion of the pass....lots of math here too.

● Also, let us not forget that just catching the ball is not enough. The receiver must evaluate their physical position on the playing field and consciously try to get both feet (professional rules) in

bounds while holding on to the football securely all the way to the ground.

The quarterback, receivers relationships are a critical part of any offense and often make or break a games outcome. Winning is impossible without effective mathematics. It's not an accident when we see the amazing acrobatics during play, as the amount of practice, communications, mental and physical preparation and planning are months or years in the making.

I love football, and understanding the **STEM of football** vastly enhances my personal enjoyment and appreciation of the sport as I watch. The human brain is amazing from birth and the incredible execution of play by these athletes staggers the mind..... mathematically.

# A Recipe for Friendship:
Using Food to Foster Classroom Community

By Lisa Trout

The beginning of the school year brings the excitement of meeting new faces, planning lessons, and creating activities to spark students' imaginations. Students anxiously await meeting their teachers and finding out who will be in their classroom.

This year will be my eighteenth September as a teacher, and each has been different. When I started teaching, my mom would volunteer at the school, which was a win-win for me as she spoke French and had much to share. Her stories were the lessons, and her cooking was the connection which resulted in engaging the students 'hands-on'.

As the youngest of seven children, it was no surprise that food brings people together; my family was no exception. However, using food in the classroom to bring students together was new. Time and time again, I tested this out and realized that students were more

engaged, connected, and learned a second language much quicker when I integrated food. Hands-on learning using food is a unique tool to build friendships among students as it engages multiple senses. The lessons learned have practical applications in building social skills and empathy. The beginning of the school year offers the perfect opportunity to establish new routines through team-building activities, such as cooking.

## Food and friendship

Food undoubtedly brings people together. The smell of freshly baked cookies from the oven brings me back to my childhood at my grandma's house. As I enjoyed these cookies, she would share stories with me, and I would learn all about her life.

These experiences extend to family meals and celebrations where food becomes intertwined with cherished

memories. Sitting down for a family meal, we acknowledge shared successes and challenges while nourishing and preparing our bodies for the next chapter.

The classroom is much the same. We share stories, create memories, and forge friendships. The beginning of the year is the ideal time to build a classroom community. We want students to embrace being problem solvers and innovators and connect to their communities, in and out of the classroom. For students to want to be a part of the classroom community, they need to feel like they belong. As we invite family and friends around the dinner table, we invite new faces into the classroom every September.

## Collaborations and food

For many years while teaching elementary school students, I quickly made it a habit to bring food into the classroom whenever the opportunity arose. While there is no kitchen in the classroom, I integrated my science lessons with the fun changes we often see in foods like fruit-flavored gelatin. In Math, we explored patterns using foods on skewers and learned more about recipes through storytelling with seniors in the community.

For the last few years, I have taught food classes in middle school, equipped with six cooking stations and 30 students per class. We have made everything from homemade pizza dough, using my mother's recipe, to gingersnap cookies, using the recipe dating back to when I was a little girl in my grandmother's kitchen. Although having a kitchen helped, many lessons remained the same. As students walked into class, they would look around for anyone they knew, seeking familiarity with a friend. However, students were mixed, and their friends ended up in other classes.

I always found it interesting to see how a group of students who did not previously know one another would come together to cook. The aim was to cook food that they would enjoy eating and feel proud to serve to others. Responsibilities were delegated, challenges addressed, and collaboration was vital. Some students naturally stepped into leadership roles, while others were more content observing from the sidelines.

Some grew impatient with others and their leadership styles, which was a perfect time to step in as a facilitator and teach these skills in real-time by asking, "How can we work together to complete this recipe in our time frame, ensuring everyone participates, and the food is safe to eat"?

Throughout the term, students made new friends and worked with various students in a diverse, sometimes high-stress environment. We emphasized team building, compromise, overcoming challenges, celebrating successes, accountability, and fostering individual and collective creativity. Some students preferred to learn to cook for themselves, avoiding interaction with others.

This presented a valuable opportunity to navigate these feelings in a supportive environment, recognizing that we don't live in isolation. Others wanted to complete all tasks independently and present their dish while the rest of the group observed. These teachable moments can all unfold in one cooking class, where preparing and sharing a meal helps students get to know their classmates better and allows them to be more comfortable working together in a classroom environment (Lukas, 2011).

When I first began teaching cooking classes in the community, parents

would not attend the class. This was purposeful, as children would engage with each other and try new things based on the idea that another child was doing it. Parents later mentioned that they struggled to present new food to their children and wanted to know my secret.

My secret was bringing students together through food experiences, where they try new things and take risks in a supportive environment with their peers. It fostered a sense of shared experience.



Learning doesn't just happen inside the four walls of the classroom. As teachers, we aim to invite a love of learning in the classroom while preparing students for a life beyond school. Cooking activities build an appreciation for family, friendships, culture, and sustain-

ability while strengthening the ties we have with our community. This same community will continue to nurture and support our students when they leave school. "Students must be engaged in meaningful, hands-on service that addresses real-life needs in the community." (Schoenfield, 2006, p. 1). The classroom needs can be diverse, and bringing students together with a collaborative recipe does more than just teach life skills; it can be the first step in building stronger school communities.

and match the ingredients according to their preferences and dietary restrictions. In the Fall, I always start with my apple pie smoothie recipe and then integrate this into the curriculum.

I connect this recipe to Language Arts, Math, and Science. Talking about safety and hygiene when working with food is also an excellent opportunity to discuss classroom safety and hygiene for the school year. Each student is then assigned to a group.

> *"Students must be engaged in meaningful, hands-on service that addresses real-life needs in the community."*

## Five fun food activities

Creating a classroom environment based on hands-on and shared experiences can be a great way to start learning more about food education. Here are five activities to try this school year while implementing routines and facilitating student relationships. When introducing something new, always prioritize safety and hygiene, incorporate this learning into other subjects, use teachable moments to build classroom community, and above all, have fun!

1.    Find a simple, no-bake recipe that students will enjoy. A smoothie recipe is always fun; students can mix

The group then decides the ingredients they want to use, assign jobs, and write the recipe. When ready, the teacher supports them by adding ingredients to the blender and serving.

2.    Ask students if they have grandparents who want to come into class to share a recipe and a story. Students can prepare interview questions in small groups and ask specific questions about family, friends, and resilience during difficult times. Families who visit allow students to see their own culture represented and gain insight into the diverse histories of their peers.

3. Host a September potluck where students bring a dish from their heritage. While sampling the variety of dishes, students ask questions and get to know the other students in the classroom. This encourages skill development for interviewing, listening, and growing one's palate for diverse foods.

4. Have students engage in a month-long recipe development project where they research a dish, cook it together, and present it. For younger students, have them do more accessible no-bake recipes such as energy bites.

5. Have students start a small window garden in groups or pairs, with each group responsible for one herb or vegetable. As they patiently care for their plant, they build teamwork skills, eventually harvesting their plant to create a recipe and share it with the class.

From developing problem-solving and critical thinking skills to fostering experiential learning and creativity, food education opens a new world of learning. Integrating food-based learning activities into the classroom can be a powerful way to build connections and enhance learning.

Reach out to colleagues who may want to partner up with you to complete a recipe. Talk to community members who are willing to come in and share their talents. Ask your students if they have family members who want to share a recipe. September offers the perfect time to introduce this approach, laying the foundation that can enrich students throughout this school year and for many years to come.

If you wish to use targeted recipes with a lesson plan, contact Lisa Trout or Little Chewz for more ideas and support and discover how food education can make a difference in your classroom!

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About the author:

**Lisa Trout** is an experienced educator with over 18 years teaching French immersion in Alberta and abroad. As a certified holistic health coach, she is dedicated to integrating food education and holistic approaches into her teaching.

Currently pursuing her M.Ed. at the University of Calgary, Lisa explores the connections between food education, mental health in schools and experiential learning. She founded Little Chewz to bring real-world food learning into classrooms and homes, promoting cultural connection, storytelling and environmental stewardship.

Lisa has delivered over 100 workshops and presentations on food education and wellness in schools. Her published works, including children's books, aim to foster intergenerational connections, enhance language skills and build community engagement. When she is not teaching, she is kickboxing, painting, practicing yoga or out in the mountains snowboarding and golfing with her family.

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# Tomorrow's STEM Pioneers Are Sitting in Today's Middle School Classrooms

By Dr. Paula Grisanti / CEO of the National Stem Cell Foundation



**Dr. Paula Grisanti / CEO of the National Stem Cell Foundation**

America has a problem. It's a workforce preparedness problem, a global competitiveness problem, and a national security problem. The issue? A critical shortage of U.S. science, technology, engineering, and math (STEM) graduates to fill millions of available jobs.

The National Science and Technology Council's Committee on STEM education reported in 2018 that India and China far outpaced America in the number of science and engineering degrees conferred worldwide – India accounted for 25% of the global total, while China accounted for 22% and the U.S. accounted for only 10%. In looking at the percentage of STEM graduates

*"Today, the economic prosperity and national security of the United States rests increasingly on its capacity for continued scientific and technological innovation."*

-Office of the President of the United States, National Science & Technology Council

by country, 2020 reporting by the Organization for Economic Cooperation and Development (OECD) estimated that more than 40% of all college graduates in China and 34% of all college graduates in India obtained STEM degrees, but only 20% of all college graduates in the U.S. were STEM graduates.

According to a 2022 Department of Defense report, the population of China is four times that of the U.S. but produces eight times the number of STEM graduates.

Compounding the issue, a disproportionate number of U.S. STEM graduates are foreign nationals with temporary visas. In 2021, temporary visa holders born outside the U.S. earned more than half of all doctoral degrees in computer and information sciences (59%), engineering (60%), and mathematics and statistics (54%), all fields the National Science Board has linked to critical and emerging technologies crucial for national security and economic prosperity.

**Declining U.S. Student Performance**

In 2019, the National Assessment of Educational Progress (NAEP), a standardized test administered to K-12 students, found that 27% of 4th graders in the U.S. scored below a basic level of proficiency in science. In 8th grade, that number increased to 33%, and by 12th grade, 41% tested below basic levels in math and science, with just 22% deemed proficient in science and 24% deemed proficient in math. COVID created even greater setbacks.

There are multiple factors involved in the U.S. decline of K-12 student performance in STEM, but top among them is a significant shortage of qualified teachers. While access and exposure to STEM subjects starting in elementary school are foundational for ongoing student interest in STEM fields and occupations, subjects like computer science, physics, and calculus are not routinely available.

Nearly 30% of American high schools don't offer a physics course and 40% don't offer calculus, and unlike many other countries we compete with, the U.S. does not require computer science (CS) education.

According to a 2023 report from Code.org, there are more than 350,000 open computing jobs nationwide, but only 57% of high schools offer CS classes. Twenty-nine states have adopted policies to ensure high school student access to CS, but only 13 states provide access for all students K-12.

The nationwide shortage of qualified STEM teachers in middle and high schools, and the lack of access to key subjects, have a material impact on the development of our kids, even those who do ultimately pursue a career in STEM. Seventy-four percent of students successfully graduating with a degree in STEM identified poor instruction early on as a major barrier to success.

**Finding Solutions**

Ten years ago, in search of a workforce development solution for the alarming shortage of U.S. students interested in and prepared to enter STEM fields, we partnered with The Gatton Academy of Mathematics and Science at Western Kentucky University (WKU) to develop and underwrite the National STEM Scholar Program.

The Scholar Program provides advanced STEM training, national networking, project support, and year-long mentoring for science teachers motivating students at the tipping point of life-long science interest – middle school.

Research shows that children in middle school who become excited about science are the ones who will pursue STEM courses in high school and

major in STEM subjects at the technical and college level. Middle school is a pivotal time in a young person's development, when students begin to consider career paths and make judgments about their options. Today, nearly 50% of 8th graders in the U.S. lose interest in pursuing the STEM-related subjects increasingly required for any living wage job.

The Scholar Program inspires middle school students by investing in middle school teachers. Each year, ten middle school teachers are selected from a national pool of applicants based solely on their description of a "big idea" Challenge Project they would implement in their classrooms if funds were available. Each Scholar class convenes on WKU's campus in early June for a week of advanced STEM training and full Challenge Project development with input from WKU faculty and their STEM Scholar class colleagues.



Through a funded Speaker Series, they also spend a day interacting directly with a nationally or internationally recognized STEM thought leader.

Past speakers have included Dr. Eric Mazur, Balkanski Professor of Physics and Applied Physics at Harvard University and widely regarded as the father of peer-to-peer teaching, and Dr. John Medina, celebrated author of the best-selling Brain Rules books on brain development at different ages. They leave with a laptop/tablet to facilitate ongoing collaboration, a stipend for technology and supplies to implement their projects at home, and sponsored attendance at the National Science Teaching Association (NSTA) National Conference the following spring.

Every STEM Scholar class since 2017 has received prestigious, peer-reviewed invitations to present their Challenge Projects at an NSTA National Conference, the premier professional development and networking conference for science education. It is attended by approximately 10,000 teachers and exhibitors from all 50 states and more than 25 countries.

With the recent addition of our ninth class, there are now 90 teachers in 35 states who have participated in the program and will have collectively impacted more than 156,000 middle school students in the U.S. by June 2025.

Ninety-one percent teach in public schools, 43% in mid-to-high poverty schools, and 39% in towns with a population under 15,000. A requirement of Scholar selection is the responsibility for sharing lessons learned with colleagues in their home schools, districts, and states, multiplying impact over multiple classrooms and years.

**Funded projects to date include:**

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|---|---|
| Rocketry Programs | Air and Water Quality Studies |
| Robotics Programs | Bridge Engineering Programs |
| 3-D Printing Labs | Greenhouse Design/Build Programs |
| Aquaponic Farms | Maker Spaces |
| Seismology Labs | Oyster Reef Restoration |
| Trout Hatcheries | Wind Turbine Projects |

By specifically targeting middle school science teachers and equipping them with the tools and technology they need to fully engage student interest in STEM subjects, we expose large numbers of students to real-world science that engages and excites them – opening a path forward for the opportunities that exist in multiple STEM fields. Reaching and inspiring students at this critical decision-making age will directly impact how many choose to pursue the STEM skills essential for 21st-century jobs.

In 2021, our team launched the STEM Scholar Library to expand program reach by providing a digital library of project-based science lessons and custom curriculum designed for maximum impact in middle school classrooms.

The Library's curated collection of educational tools and resources includes a catalog of Scholar-developed Challenge Projects and bite-sized video demonstrations of "STEM Shorts" directed by STEM Scholar Program co-director Rico Tyler. All projects are Next Generation Science Standard (NGSS) aligned and categorized by discipline for ease

of use. The Library is available free of charge for teachers, students, and parents in virtual and hands-on classrooms worldwide.

**Ways to Get Involved**

As a business community operating in an era increasingly reliant on STEM expertise, we collectively hold a pivotal role in shaping our future workforce. A strong foundation in science, technology, engineering, and mathematics is no longer merely advantageous; it's essential for securing sustainable, well-paying jobs. To ensure our nation's continued economic prosperity and global leadership, we must prioritize STEM education at every level, beginning with our youngest learners.

To create a thriving STEM community, businesses must become active partners in their local schools. By embracing a mentorship role, companies can impact young lives. By supporting local middle school science teachers, businesses can directly contribute to the development of future innovators.

Sponsoring extracurricular activities like robotics clubs, maker spaces, or rocketry programs provides students with hands-on learning experiences that spark curiosity and develop critical thinking skills. These programs encourage a collaborative and creative environment where students can explore their passions and discover their potential.

This is America's future workforce. They are the next generation of scientists, researchers, and engineers who will make possible the discoveries and innovative technologies that change paradigms. They are the ones who will make breakthroughs, find cures, solve problems, take us to space, and build a world free of some of the most pressing challenges we face now. We must find ways to build a competitive workforce by supporting science and math education in our public schools now.

# Accelerate Your Career with AI Certification

Start with the Microsoft Azure AI Fundamentals courses where you'll learn the foundation of modern artificial intelligence (AI) and machine learning (ML). This will enable you to recognize common applications of AI and identify the available AI services in Microsoft Azure.

- 4 Week Course | 10 hours/week
- 100% Online, Instructor led
- Equipped to pass the AI-900 exam
- Exam voucher included
- Price: $750

Once you have the fundamentals or programming experience, you can be eligible for the Microsoft Azure AI Solutions course. This is where you'll gain a comprehensive understanding of the of the responsibilities encompassing the design, deployment and maintenance of AI solutions.

- 8 Week Course | 8-10 hours/week
- 100% Online, Instructor led
- Equipped to pass Azure AI Associate AI-102 exam
- Exam voucher included
- Price: $2,400

**Ask About Bridge Builders Scholarship:** TAG Bridge Builders and SkillStorm are committed to promoting equity and diversity in the workforce. Apply for a scholarship tailored to serve minorities in Georgia who are looking to advance their tech careers.

## Sign up for a course today!

SKILLSTORM

# AI Skills: The New Currency in Today's Job Market

The AI revolution is here. Ever since ChatGPT arrived on the scene in late 2022, artificial intelligence has been reshaping the way we live and work. What does that mean for tech professionals looking to compete in a changing labor market?

TV pundits and talking heads love to get riled up about whether robots are coming for our jobs — but the truth is that AI will probably create more jobs than it eliminates. And one thing's for sure: understanding how AI works, and mastering AI skills, will be the key to success in tomorrow's ever-changing world of work.

New research shows that a growing number of companies are asking for AI skills in job descriptions — including non-tech roles. And a survey of HR professionals released last month shows that job candidates with AI skills ask for more money during the interview process — and tend to get it once they're hired. Simply put, AI is going to be underpinning nearly every job out there. That's why staying ahead of the latest in AI development is so important.

Building AI skills doesn't just mean learning how to engineer prompts for ChatGPT. It's everything from programming to data modeling and analysis to mastering concepts like machine learning and natural language processing. And if there's anything certain in our fast-paced economy, it's that building AI fundamentals today will translate to career opportunities tomorrow and beyond.

That's where SkillStorm comes in. In partnership with TAG, we offer Microsoft Azure AI courses that are instructor-led, career-aligned tech certification courses and will help you build the AI skills that employers need. From the basics of AI and machine learning to a comprehensive understanding of how to design, deploy, and maintain AI solutions, you'll learn everything you need to accelerate a career in the economy's hottest fields.

It won't be long before all kinds of jobs, all across the economy, require AI skills. And starting now is the best way to accelerate your ascent up the career ladder. Build those skills today and you'll lay the foundation for opportunity for years to come — and set yourself up for success in an AI-driven future of work. Register today to get started with a career in tech.

# GEORGIA PATHWAYS MAGAZINE

Georgia's most influential workforce development and STEAM magazine which is distributed monthly to over 62,000 individuals state-wide.

## Readership:

**68%** Educators, K-12 Students, Parents, and School Administrators

**16%** Industry professionals

**8%** University professors and their students

**8%** Other interested individuals

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