

# BRANCHING OUT BEYOND STEM

For high schoolers, a career in the baking, snack or food industry may be one of the best-kept secrets out there, but it doesn't have to be. Here's why.

by Dan Malovany

Although she grew up in a family that's "just a generation removed from the farm," Abby Mitchell never fully understood how food companies operate, how the supply chain works — or even how food products are created.

That was until she enrolled in the Center for Advanced Professional Studies (CAPS), an innovative program developed by the Blue Valley School District in Overland Park, Kan. Here, juniors and seniors take specially designed classes that allow them to explore potential careers while working with industry professionals on real-world problems and projects.

"I knew where food production started, but I was very clueless to the in-between," said Ms. Mitchell, currently starting her career as a marketing representative for John

Deere. "I knew it started at the farm level, but as to how it got to my grocery store, I was completely in the dark. Quite frankly, I hadn't even thought about it prior to CAPS."

Founded in 2009, the CAPS Network consists of 69 programs in 125 school districts spread across 19 states and three countries. In this network that spans across the nation, students may sign up for courses ranging from science, technology, engineering and mathematics (STEM) to legal, medical and other disciplines. One course focuses on the Future of Food where mentors from companies like Corbion and DuPont Nutrition & Biosciences in the Kansas City-area and Tyson Foods in Bentonville, Ark., open the doors to the food industry for students to see.

High school students develop a wide variety of products as a part of the CAPS Future of Food course. Blue Valley CAPS



Overall, the curriculum in each location follows CAPS core values that include profession-based learning, professional skills development, self-discovery, exploration and others. However, each program supports high-skill, top-demand careers through ongoing innovation in curriculum development and programs and services based on local business and community needs.

For Ms. Mitchell, a graduate of Kansas State University (KSU) with a bachelor's degree in agricultural economics, CAPS courses flipped the switch and shed new light on a career in the industry at an early age. The program led to an internship with the US Department of Agriculture Office of the Chief Scientist and participation in the World Food Prize Foundation's annual competition that opened her eyes to the global food industry and its potential to do more than just put a meal on the dinner table.

A combination of classroom learning and hands-on experience in a test kitchen teaches students everything from global food security issues to commercially developing products.

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## SINCE SLICED BREAD TACKLES THE WORKFORCE GAP ISSUE

During the pandemic, finding qualified candidates to fill a myriad of skilled positions remains one of the greatest challenges in the baking industry.

In the newest season on *Since Sliced Bread*, Charlotte Atchley, senior editor, *Baking & Snack*, speaks with an array of bakers and experts about how companies can solve the interminable problem of hiring and retaining talent of all skill levels.

"We not only break down what the problem is exactly, but we also feature bakeries that have found success in addressing this issue, whether they changed where they were looking for workers or made their business more attractive," Ms. Atchley said.

Kicking off the season is a conversation with Marjorie Hellmer, president, Cypress Research Associates. Ms. Hellmer discusses how the baking industry has evolved since Cypress conducted the 2016 Workforce Gap Study commissioned by the American Bakers Association and the American Society of Baking.

"The quick answer is that there is and will continue to be a perennial shortage of quality job candidates within United States manufacturing and, therefore, commercial baking," Ms. Hellmer explained. "It's really a long-term challenge that won't be solved by near-term, temporary industry benefits of high unemployment rates. And, honestly, high unemployment does not mean there are suddenly skilled workers available to fill these manufacturing positions. They really do require specialized degrees or training."

Additionally, the season includes Joe Kenner and Rich Jamesley, Greyston Bakery; Gordon Smith and Aaron Clanton, Kansas State University; Kelly Loebick-Frashella, Main Street Gourmet; Dae Lee, Alvarado Street Bakery, and Brittny Stephenson Ohr, Sugar Foods Corp., and a representative for American Society of Baking.

*Since Sliced Bread* can be downloaded via Apple Podcasts, Google Podcasts, Spotify and other podcast apps. It can also be accessed on [Bakingbusiness.com](http://Bakingbusiness.com).

## STEM FOR WORKFORCE

“My generation doesn’t just want a paycheck at the end of the day, but we want to know that we’re doing a greater good, that we’re doing something not just for ourselves,” she said. “That’s such a huge motivator today, and if you are working in the food industry, you not only have that opportunity, but there is so much room for growth and development.”

### Making the industry more visible

For Laila Carter, the Future of Food class took the idea of STEM to a whole new level by taking the theory of science and making it more relatable to the real world. Some of her most memorable experiences included collaborating with “an ice cream chemist” from DuPont to develop a gluten-free, ice cream cookie sandwich product for a class project and having a food microbiology internship with the company.

While she was a KSU student, Ms. Carter took what she learned from CAPS and developed Laila’s Thiccck Paleo Cookies that were sold at a local café/coffee shop chain in Manhattan, Kan.

“Once you’ve been through CAPS, everything that you do stems from CAPS,” she said.

Hearing from food professionals along with visits to local food operations gave her the firsthand knowledge that fed into the natural curiosity Ms. Carter gained from watching the show “Unwrapped” while growing up. Currently an account data analyst at Synexis, a biodefense firm, she never stops applying what she learned from CAPS.

CAPS, Ms. Carter added, provided a correlation between her biology classes and an understanding of how food companies work.

“That was the link,” she said. “That cool ‘aha!’ moment where you see it in action is part of CAPS.”

Jennifer Bauer, business development specialist for Blue Valley CAPS, pointed out that the Future of Food curriculum is a match for students with a penchant for STEM-based knowledge because the umbrella course blends in those disciplines so seamlessly.

She noted that the courses make students aware of the dynamics of food at an early age when they’re initially determining their potential career choices and before they invest tens of thousands of dollars in a college education. In fact, CAPS feeds KSU’s Baking Science and Management program and other universities with a food science curriculum.

### One of a kind

Started in 2014, the Future of Food program was spearheaded by Jennifer Lindsey, vice-president of global marketing at Corbion; Joe Whalen, the course’s instructor; KSU advisors; and Blue Valley faculty members.

“It mirrors what industry is really like,” Mr. Whalen observed. “It’s part science. It’s part business, and it’s understanding society’s relationship with food.”

He said the first semester of the multidisciplinary course immerses students in the entire breadth of the food industry and complements other CAPS courses. In

Left: Business professionals volunteer to teach how food companies work and raise awareness of a potential career in the industry. Right: Students develop products, then create a business plan to take them to market.  
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# “ONCE YOU’VE BEEN THROUGH CAPS, EVERYTHING THAT YOU DO STEMS FROM CAPS.”

Laila Carter, former CAPS student

fact, teachers or industry professionals from a separate discipline, such as chemistry or marketing, may teach students how to develop a business plan for a food product while students from other classes, such as engineering, may join the Future of Food class on a trip to a snack facility to see how potato chips are made.

“What makes the Future of Food class unique is that instead of being specialized to one area, you’re getting a broad, sweeping overview of an entire industry where you see all of these different specialties that are involved in this particular industry,” Mr. Whalen said. “The goal of the first semester class is to provide this broad overview of all of these different specialties that go into food and the food industry, and food in its relationship to society. It teaches you that no matter what area you’re interested in, there is a career for you in the food industry.”

Ms. Bauer noted a class may include a presentation from a mechanical engineer from Burns & McDonnell, a Blue Valley CAPS partner, to describe the challenges around developing a scoop tortilla chip or how to evenly coat an ice cream bar with nuts or nougats.

Alicia Poole, co-founder of Balance the Superfood Shot, Mission, Kan., and former marketing manager of Red Bull and other startup initiatives, speaks to students about her career as an entrepreneur involved with several startup food and beverage businesses.

“So often, you don’t get introduced to careers until after high school,” Ms. Poole said. “Of course, that’s changing now with the CAPS program.”

Introducing the next generation to the food industry, she added, allows them to pinpoint their true career interests before making a commitment to a college.

## Hands-on classroom training

It’s the dearth of talent rising into the food industry that drove Ms. Lindsey to become involved with CAPS and the development of the Future of Food program.

“You talk to average college kids and say, ‘Hey, are you going to go into baking science?’ They are then going to look at you and say, ‘What are you talking about? There is such a thing?’” she observed.

Part of the goal for the Future of Food course, she said, involves allowing the industry to reach out to students in other STEM disciplines.

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### ABA STUDY EXPLORES INDUSTRY'S INVESTMENTS IN FRONTLINE WORKERS

A new study by the American Bakers Association (ABA) and NDP Analytics found that entry-level frontline workers in the wholesale baking industry have opportunities to grow into leadership positions within their companies.

In 2019, 66% of companies participating in the Baking Industry's Frontline Workforce Landscape study reported that at least one in every four frontline supervisors or managers was promoted from within the business.

Moreover, 39% of surveyed companies spent \$1,000 or more per worker on training while 61% spent less than \$1,000 per worker. For comparison, ABA noted, the manufacturing and distribution sector overall spent an average of \$672 per learner on training in 2019.

Additionally, 76% of companies in 2019 offered programs designed to recognize and reward workers for their achievements, and more than 80% of companies involved frontline workers in safety programs and best practice management.

Overall, the new study examined commercial baking and supplier companies' investment in frontline workforce engagement and career development as well as the support of their local communities. The report provides important data that reinforces the baking industry's role as an essential manufacturing employer.

ABA added that the baking industry also offers frontline career opportunities that are well-positioned for veterans of the armed forces. The study found more than 3,000 veterans were employed in baking industry frontline careers in 2019. For those companies, the most common types of veteran-specific programs were recruitment and training.

In addition to creating career opportunities for frontline workers, the study found the baking industry is committed to supporting communities and reducing its environmental footprint. In 2019, 70% of companies donated food to food banks or other charitable distribution outlets, 75% donated money, 67% volunteered, and 43 ABA member facilities were recognized as 2019 Energy Star-certified manufacturing plants. Companies donated more than 26 million lbs of food, gave nearly \$7 million to charities and local organizations and volunteered nearly 31,000 hours. These contributions only account for a subset of the industry.

For more information on job opportunities in the baking industry, visit [www.BakingWorks.org](http://www.BakingWorks.org).

"Being a sponsor could involve simply showing up and working with the kids for a day," Ms. Lindsey said. "Tell them about the baking industry so awareness is there because students are already interested in engineering. They can work on projects that are applicable to the baking industry."

In addition to curriculum development, Ms. Lindsey works directly with students on creating a food product, how to prototype it and what's needed to take it to market. Ms. Bauer suggested that this is an integral segment of a semester-long project.

"The culminating activity for all students is pitching a novel food product," she explained. "The process starts at the beginning of the semester when they start market research to identify gaps. Over the course of the semester, they refine their product idea, engage with industry experts, create prototypes in the test kitchen, learn how to write a business plan and ultimately pitch the product 'Shark Tank'-style."

A panel of judges, including professionals like Ms. Poole and Ms. Lindsey, then judge the new products, which are developed in the program's test kitchen. Mr. Whalen recalled how Kirsty Gordon, a former student, developed a gummy candy called "Fight Bites" that are shaped like boxing gloves and feature antioxidants to fight back inflammation and disease. Her team worked with engineering class students to develop a mould for producing the candy, evaluated which ones worked the best and suggested design changes to make them commercially feasible. Ms. Gordon, however, best remembers the class for what Mr. Whalen taught.

"I had the home baking side of food, but Mr. Whalen came in with the molecular biology side and added that layer of science that boosted my knowledge going into college courses," said Ms. Gordon, a KSU graduate and now a technical miller with Bay State Milling.

For the final project, she also gained valuable personal skills, especially from a business and entrepreneurial perspective.

"Giving the big presentation made so many things easier in college," said Ms. Gordon, adding that the exploration into the global food industry added "a much deeper level to the course."

### An eye on the future

In the second semester, the Future of Food dedicates students' time to a single project or real-life work experiences from local businesses. Mr. Whalen works closely with each student to develop the semester plan, which is then mostly driven by student initiative.

Ms. Carter, for instance, received a mini internship working with a local children's hospital doctor who specializes in food allergies, one of her personal interests.

## STEM FOR WORKFORCE



Other students worked for CAPS partners such as Balls Foods, which owns Tippin's Pies and grocery stores in the Kansas City area.

And then there are larger issues. Ms. Mitchell delved into a food security solution, specifically a bio-composting system for addressing the lack of fresh water and access to nutritional food in Honduras.

"CAPS provided the space to allow this project to come alive," Ms. Mitchell said. "Without it, I don't think I would have had the time or the ability to work on the project with all of the other extracurricular activities and things that were going on in high school that kept me busy."

Heightening awareness of career options, especially among students living in cities or the suburbs, remains integral to CAPS.

"Many students say, 'I don't want to be an ag major.' They misunderstand what the food industry is all about," Ms. Bauer said. "That's a critical piece of making the leap into attracting students into these majors."

Mr. Whalen pointed out that the

CAPS students discover how the food industry works by visiting local processors as a part of the Future of Food course.  
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