LUMINA FOUNDATION

FOCUS™

Fall 2017

Not tardy ... timely!

Today's 'freshmen' are rewriting the rules on the college experience

INSIDE

Editor's note: The stories in this issue of *Focus* were reported and written by Doug Richardson, a journalist and communications professional with decades of experience. He was the Indiana Statehouse bureau chief for the Associated Press in the late 1980s and early '90s and later served as director of communications for the White House Office of National Drug Control Policy. He also led policy and communications efforts for the Democratic Governors Association and has worked for several public affairs, law and lobbying firms. He now owns DirectionPR, a public relations and communications firm in Washington, D.C.

On the cover: Marcia McCallum of Austin, Texas, a self-described "typical soccer mom" in her younger years, now works in the cell culture lab in the Bioscience Incubator at Austin Community College (ACC). The 52-year-old grandmother is also a student, pursuing her second associate degree from ACC.

PRESIDENT'S MESSAGE

Each fall, perhaps like many of you, my mind replays a vivid memory from my late teens. I'm standing outside a freshman dormitory — in my case, on the campus of Bates College in Maine — saying goodbye to my parents. I'm excited … more than a little nervous … and trying hard to seem nonchalant despite the swirl of emotions enveloping all three of us.

By and large, it's a pleasant memory, one of the first chapters in a story I'm still writing: a decades-long story with higher education as its driving force. For me, college was a defining experience. It widened my world almost immediately, and over the years it has enriched my life in countless ways — so much so that I've built a career around the idea of increasing postsecondary opportunity for others, making it available to all Americans.

The thing is, as pleasant and precious as that freshman memory is to me, its details resonate with fewer and fewer people these days.

It's not that the postsecondary experience is less valuable now. Quite the contrary; college-level learning is more important than ever. In fact, labor economists and other experts insist that an education beyond high school is a must for anyone who hopes to sustain a middle-class lifestyle.

What's different now, though, is … well, almost everything. The very fact that ***everyone*** now needs some type of postsecondary education if they hope to fully prosper — that a credential beyond high school is today's "essential credential" — this represents a huge change. In essence, it automatically defines today's students as ***all of adult America:*** a huge and eclectic group with a dizzying array of attributes, challenges and life circumstances.

My own experience of "college" — a full-time, four-year program on a residential campus — is now the exception, not the rule. Consider these facts:

- Forty percent of today's students attend part time.
- Among full-time students, only one-third are ages 18-21.
- Nearly four in 10 undergraduates — 38 percent — are older than 25.
- Almost half of all students are on their own financially.
- Forty percent work more than 20 hours a week, and one in four works full time.
- One-fourth of all students are raising children; and among African-American students, that percentage nearly doubles — to 47 percent.
- What's more, 13 percent of today's college students never set foot on campus. They're taking ***all*** of their classes online.

This issue of *Focus* magazine is all about these new types of students, but it doesn't dwell on statistics. We'll look beyond the numbers and introduce eight real-life members of today's student body.

For example, you'll read about Marcia McCallum, a 52-year-old grandmother who raised four children before deciding it was finally her turn to earn a degree. You'll meet 26-year-old engineering student José Cancino, a high school dropout who worked odd jobs as a carpenter and landscaper before choosing to enroll. And you'll get to know Nick and Lukas Kwiatkowski, brothers in their early 20s who found an innovative apprenticeship program that helps them build the skills — and earn the credentials — leading to good jobs in high-tech manufacturing.

In addition to these profiles in print, there's a wealth of information on our website, *www.luminafoundation.org*. There, *Focus* offers several extra features, including compelling videos of some of the students, audio clips, and links to related stories.

All of the material in this issue of *Focus* is meant to shine a spotlight on first-time students, people with no postsecondary experience who decide to take the plunge and pursue a college-level credential. For most, that wasn't an easy decision, and they deserve our credit for making it. What's more, they deserve our thanks — because the skills and knowledge they gain from their programs, the ***talent*** they develop, will contribute to our economy and society, ultimately benefiting us all.

For this new crop of 21st century students, the postsecondary experience is no less impactful or important than mine was. True, their journey may not begin with a poignant parting on a New England college quad, but higher education will change their lives, too — perhaps even more dramatically than it changed mine.

Jamie P. Merisotis
President and CEO
Lumina Foundation

The new face of the

If you think of a "college freshman" as a dorm-dwelling 18-year-old, think again.

Instead consider a 52-year-old grandmother of four … a 26-year-old high school dropout … a 23-year old Army National Guard sergeant back from the Middle East … a 34-year old immigrant from Mexico. These are truly the students of today.

They're a diverse and driven group, with goals forged in hard times and odd jobs, false starts and course corrections. They've raised children, waited tables, landscaped yards, cleaned restaurant carpets at 2 a.m., maintained Army helicopters in the desert heat. They're adults now – and students, too, because they've learned, often the hard way, that a high school diploma isn't enough.

On the following pages, you'll meet some of these students — seven members of America's "new freshman class." They're eight individuals, from all walks of life, who are seeking or have recently earned their first credential after high school.

"I kind of had a feeling there was something out there waiting for me," said Marcia McCallum, now attending Austin Community College in Texas more than 30 years after earning her high school diploma.

Chris Mulford, an Army National Guard sergeant and student at Central Piedmont Community College in Charlotte, N.C., stated it simply: "I wanted something more for my future."

Community college officials say that today's students — often spanning multiple generations in chronological age — have learned the tough lessons of the modern economy. More and more jobs require education or training beyond high school, experts say.

In Seattle, home to a booming economy, the average age of students at Seattle Central College is 28, said college President Sheila Edwards Lange. Many of these students are enrolling after years of absence from the classroom, and they are juggling education, work and family commitments, she said.

"I can really identify with our students," Lange said. "I was the first in my family (to go to college), and I had to stop out along the way and work. I was fortunate to have people to encourage me to go back."

The jobs of the present and future in Seattle,

freshman class

Austin and other cities require more education than in the past. By the year 2020, 65 percent of all jobs in the United States will require a credential beyond high school, according to a study by the Georgetown University Center on Education and the Workforce. By comparison, in 1973, only 28 percent of jobs required a college-level credential, the study said.

President Lange "always says when she sees all that economic activity outside her window, that our role is to be really cognizant of who's left out of that opportunity," said Yoshiko Harden, vice president of student services at Seattle Central College.

To serve this new group of students, and to recruit the next group, community colleges are experimenting with new ways to attract, retain and sustain students all the way through to completion of their studies.

In Seattle, that can mean bulked-up resources for counseling and mentoring, advice on obtaining financial aid, new ways to assess readiness and assign course placements, and completion coaches to help guide students to degrees. "Our mission is open access," Harden said. "Regardless of where you are starting, or where you have been, we make a promise that you can come here and earn a degree."

At Austin Community College, a relatively new ACCelerator program in a converted shopping mall provides students self-paced, just-in-time help with math. A degree map charts each student's path to completion, and new open-education resources are being developed so some students can complete an entire degree program without buying a single textbook, according to Richard Rhodes, the college's president and CEO.

And in Charlotte, officials at Central Piedmont Community College have recruited businesses that invest as much as $175,000 per student in a rigorous apprenticeship program. Central Piedmont also has developed cutting-edge training in engineering and technical programs, and the college has committed new resources to help military veterans make the transition to schooling and civilian life.

All of these efforts — and countless others across the nation — have a common goal: to better serve the varied needs of today's students … just like the ones you'll meet on the following pages. •

“Living proof that it’s never too late.

Rodney Owens

Rodney Owens works with Central Piedmont Community College (CPCC) students (from left) Timothy Gerald Jr., James Dragstrem and Nick Rollogas in the college's Computer Integrated Machining Lab. Owens, a part-time instructor at CPCC, also guides students outside the classroom, tutoring and advising in local high schools.

Owens helps Rollogas learn the proper technique for programming one of the lab's computer numeric control (CNC) tools. CNC machines are (literally) cutting-edge tools for advanced manufacturing; they're used for precise cutting, milling and machining.

CHARLOTTE, N.C. — When Rodney Owens graduated from high school in 1991, his choice seemed clear: go to a four-year college or get a job. Now, decades later, he realizes there are other options, and he's made it his mission to let young high school graduates know that.

"After high school, I wanted to go straight to work," said Owens, now 44. "I didn't think of a college degree because my parents couldn't afford it."

So young Owens went to work, starting out in a custom automobile and stereo shop and eventually launching his own business customizing cars and motorcycles in Charlotte, N.C. That paid the bills and kept food on the table for his growing family until a falling out with his business partner forced him to reconsider the course he'd charted.

"When all of the fun got sucked out of my career, I sat down and realized I wasn't happy with my life," he said. "Even with the success in business, it felt like there was something missing. I think it was really about hanging that diploma on the wall. My father always preached to me the importance of having a piece of paper on the wall. That it was the difference between five and 15 dollars an hour."

Although he had signed up for an occasional class to learn how to use new machinery for his business, Owens had never been on a path to a degree since graduating from high school. That changed in 2013, when he decided to enroll at Central Piedmont Community College.

He started with small steps, taking the required math and English courses he would need for an associate degree. Unlike many returning students, Owens had kept up with his math skills as part of his business. But he admits he "struggled with English classes." He also researched ways to help pay for his education, securing a Pell grant that allowed him to attend Central Piedmont.

But the eye-opening moment for him came when he had to pick up his transcript from North Mecklenburg High School in Huntersville, N.C.

"I was so disappointed in how I'd done in high school," he recalled. "But that motivated me when I came back to the classroom. I really wish I had pulled the trigger earlier with going back to school."

Owens was determined not to disappoint himself again. He sped through the program, earning his associate degree in computer integrated machining and

finishing with a perfect 4.0 grade-point average.

During his time as a student, he realized he was "learning at an accelerated rate, so I tried to help my colleagues and fellow students." He was good at that — so good, in fact, that Central Piedmont asked him to teach part-time. He started with entry-level courses. Now he teaches some of the more challenging courses in manufacturing and design.

"Early on, it was apparent Rodney had a gift for being able to relate to his classmates," said Eric Easton, senior program coordinator in Central Piedmont's engineering technology division. "They viewed him as a role model they could look up to and go to for guidance in their machining classes. Rodney now continues this mentorship role, not as a classmate, but as an instructor," said Easton. "He is well prepared, kind and willing to go the extra mile to help his students."

Owens expects soon to be promoted to a full-time teaching position, which would bring with it benefits and a salary that would put him "financially, in a better place" than he was running his business. His business will shut down at the end of 2017.

His guidance to students extends beyond the course curriculum. Owens helps students navigate the complex and often confusing choices they face after high school. He does private tutoring in local high schools, telling students that "there are other opportunities if they don't want to go immediately to a four-year college." He tells them about grants and scholarships, too.

And Owens is a major advocate for community colleges, actively recruiting high school students for the programs he knows at Central Piedmont.

"Growing up, Central Piedmont was considered a place people came to when they couldn't get into another college," he said. "That's not the case at all now. I think Central Piedmont is very beneficial, especially for someone who's never been to college before."

His family has heard the message. One of his two daughters has decided to attend Central Piedmont in her mid-20s, and his 16-year-old son plans to attend Central Piedmont for two years to gain credits while saving money on the way to a bachelor's degree.

Besides serving as a role model to his students and family, Owens provides "an example to all students that at any stage of life, you can return to school and achieve anything you put your mind to," Easton said. Owens is "living proof that it's never too late to continue one's education." ●

Eric Easton, senior programming coordinator in CPCC's engineering technology division, praises Owens for his ability to relate to his younger classmates – and now, to his students. "He is well prepared, kind and willing to go the extra mile," Easton says.


The kind of person who could change the world.
Ivan Fernandez

At age 34, Ivan Fernandez (above) is finally on track to earn an associate degree in chemistry from Seattle Central College — the first credential in what he hopes will eventually lead to a doctoral degree. His spouse, Brad Fernandez (left), says Ivan has "an appetite for knowledge" and a need for learning "like something I've never seen before."

SEATTLE — Cesar Ivan Fernandez always thought that if he could get back to school, his life would be better.

After dropping out of college, working in several jobs, moving frequently, getting married and trying for years to clarify his immigration status, Fernandez returned to school in 2015 at Seattle Central College.

He is now on track to graduate in 2018 with an associate degree in chemistry. And he hopes that's just the start in the pursuit of a bachelor's degree and perhaps a Ph.D.

"All along, I kept in mind: 'You need to get back to school, you need to get back to school,'" said the 34-year-old Fernandez, known to friends as Ivan. "Of course, I want to get my degree and make money, but I just love the process of education."

Ivan's spouse, Richard Bradley Fernandez, who goes by Brad, says Ivan "has a need to learn. He has an appetite for knowledge, and his need for learning is like something I've never seen before.

"Ivan has been in a different place since returning to school," said Brad. "The passion seems to grow in him. The more he is challenged, the more he gets into it."

It's been a long journey for Ivan.

He grew up in southern Mexico, part of a large, low-income family in Sayula, Jalisco. His mother had five children, and his father had another child. Although very close to his grandmother, Ivan said the rest of his family could never accept the fact that he was homosexual.

"They sent me here because I was gay," Ivan said. That was in 1998, when Ivan was 15. He ended up in Santa Cruz, Calif., where his mother had moved after leaving Mexico. He knew only rudimentary English and took an English-as-a-second-language course his sophomore year in high school. He quickly realized that mastering the new language was essential to his success, so he worked hard and, in just a year, advanced to regular English courses. By his senior year, he qualified for Advanced Placement courses in English.

"Instead of dealing with all the pain and loneliness (of his new life), I put that energy into learning," Ivan said. "I was good in the sciences and in every other class." He finished in the top 15 of his graduating class of 250 and was accepted at the University of California-Los Angeles for the fall term of 2001.

His college experience did not go well. Although UCLA offered a scholarship, Ivan couldn't obtain federal financial assistance because he was not a citizen. So, feeling financial stress and receiving no assistance from his family, Ivan dropped out of college.

"It just became impossible" to continue at UCLA, he said. "That was probably one of the most discouraging things I've had to do."

For the next four years, Ivan had several relationships and worked odd jobs. "I just liked to party, go out, have a good time," he recalled.

Fernandez confers with Dana Maestas, who manages the science laboratories at Seattle Central. Maestas has high praise for Fernandez, who works at one of the labs and also tutors his fellow students in calculus, chemistry and Spanish. "He's always the first to show up and the last to leave," she says.

In his part-time role as a Seattle Central lab assistant, Fernandez helps fellow student Farrukh Makhamadjonov prepare a frog specimen. Once he graduates from Seattle Central, Fernandez plans to pursue a bachelor's degree in molecular biology at the University of Washington.

He later found a job he liked in Scotts Valley, Calif. He worked five years as a technician in a microbiology laboratory, testing vitamin products for tainted materials. He left when the company was going through a restructuring in 2010.

He met Brad in California, and they moved frequently for Brad's work as a surgical technician. They were married in 2013 and, a year later, decided to settle in Seattle, where Brad now works at Seattle Children's Hospital.

Once in Seattle, Ivan began to explore options for continuing his education. He learned about Seattle Central College through online searches, and then met a neighbor in his apartment complex who had completed a program at the college and recommended it.

Ivan started classes at Seattle Central in 2015, and he knew immediately he was in the right place. Seattle Central was close to his new home, and Ivan says that helped him settle in.

"I needed some roots. I needed a connection. I wanted to be part of the community," said Ivan, who lives just a short walk from the campus. "I can sit there and study all day. It was very exciting. I felt like a little kid there on the first day."

However, after a good start at Seattle Central, Ivan "basically lost two terms" in his struggle to have his immigration status made permanent. He is currently covered under DACA, the Deferred Action for Childhood Arrivals program begun during the administration of President Barack Obama.

Because he is now married to a U.S. citizen, Ivan thought the status process would be straightforward. It hasn't been. He had to leave the country, return to Mexico, and then re-enter the United States so Brad could "claim" him, according to Ivan. That travel, plus the legal fees they were forced to incur, have left the couple deeply in debt.

"All five of our credit cards are maxed out because of immigration," said Ivan. Brad "has my word I will repay him for this."

"I knew it wasn't going to be a walk in the park," Brad said about the immigration process. "And this is when he is married to an American. It should be a straightforward process at this point, and it isn't."

Ivan resumed his studies after completing the required trip to and from Mexico. And he's thriving: taking a full schedule of courses, working in a laboratory, and tutoring other students in calculus, chemistry and Spanish.

"He's always the first to show up and the last to leave," said Dana Maestas, the laboratory manager at Seattle Central. "He likes helping other students, making sure everyone knows what they are learning and enjoys learning.

"He's in here every day, whether I schedule him or not," said Maestas. "He does what needs to be done and extra things, too."

Ivan hopes to move on to the nearby University of Washington after he graduates from Seattle Central. He wants a bachelor's degree in molecular biology, and then perhaps a doctorate. Beyond that, he hopes to make enough money eventually to pay Brad back for his support over the years.

Brad is confident Ivan "is going to go far."

Ivan's education "is extremely important," Brad says, "because it can be someone like Ivan who cures cancer someday or cures HIV. Or it could be the person who figures out how to power the world without fossil fuels.

"It takes just one person, and it could be this person I'm married to," Brad said. "It could be this kind of person who could change the world." ●

Later-in-life student Marcia McCallum (right) confers with Nancy Lyon, coordinator of the Bioscience Incubator at Austin (Texas) Community College. McCallum, a 52-year-old grandmother who is pursuing her second associate degree at the college, helped Lyon set up the new cell culture lab on ACC's Highland campus.

“There was something out there waiting for me.

Marcia McCallum

Marcia McCallum with her son Jon, who's been a strong advocate for his mother's ongoing education. When she talked of working full time rather than finishing her second degree, Jon and his siblings nixed that idea. They got on the computer with her and signed her up for the remaining courses.

AUSTIN, Texas — Marcia McCallum graduated from high school in 1983. She decided to continue her education 29 years later. A lot of life happened in between.

She gave birth to and raised four children, and she welcomed two grandchildren. Her family moved from Texas to Nebraska and then returned to Texas. She separated from her husband.

She also waited tables to help with the family finances, drove kids to soccer practice and swim meets, opened her home to gatherings of her children and their friends.

"I was your typical soccer mom," she said recently. "But I kind of had a feeling there was something out there, waiting for me."

In 2012, she found that something: higher education. After sending her second-oldest child off to college, Marcia, then 48, decided to enroll at Austin Community College.

She vividly remembers one of her first experiences at the college as she waited to pick up her student identification card. "When I went to get my ID for the first time, the boy who was behind me in line — he was probably 19 — said, 'Ma'am, if your child isn't here, can I go ahead of you in line?'

"You can't believe what it was like on the very first day of class," she said. "They (other students) think I'm the professor. When I sit down with them, they are surprised."

McCallum started slowly, taking an elementary algebra course during a six-week summer session. She said she was surprised to realize how much math she had forgotten. Her oldest daughter, Ashton, helped, making flash cards to refresh McCallum's memory of key concepts. Her other children — daughters Jordan and Megan and son Jon — were "very supportive."

"They were maybe a little skeptical, but once I got into the second and third semesters, they were my biggest cheerleaders," said McCallum, now 52 and the grandmother of four.

She continued to work full-time during her first year, ratcheting up her academic load from one course, to two and then, by her fourth semester, to full time. Her schedule was daunting. In addition to being a full-time student, she worked each Friday, Saturday and Sunday as a waitress, with double shifts on Saturdays and Sundays. She did that for two semesters before cutting back to just one double shift, on Sundays.

"Things were a little tight … yes," she recalls.

McCallum initially thought she wanted to become a nurse, so she started with courses in anatomy and physiology. That's when she began to believe in herself as a student.

"I never thought school was for me, and now I love it," she said. "I think the change came when I got that first 90 on a test in introductory anatomy and physiology."

After a first experience doing work in a laboratory, McCallum decided to switch her major to biotechnology.

She started to excel as a student.

"I decided I don't agree with the slogan 'C's get degrees,'" she said. "I believe you need to get your A game up there and get some A's. I am very competitive, but I am really competitive with myself."

As she worked toward completing her associate degree in applied science and biotechnology, which she finished in August 2016, McCallum took on another project: helping to set up Austin Community College's new Bioscience Incubator lab in a converted shopping mall building on the college's Highland campus.

The lab, which opened in February 2017, affords students "graduate-level research, which is unique for a two-year college," said Tyler Drake, director of the Bioscience Incubator. Space is also rented out to start-ups and other local firms that can't afford their own labs.

Nancy Lyon, the lab coordinator, said her team had already selected an intern before meeting McCallum, but decided to add a second.

"It was her personality and enthusiasm," said Lyon, who previously taught for 16 years at the nearby University of Texas campus. "What you see is what you get (with Marcia), and what you get is really good.

"We hired a student, and she makes us look good," Lyon said.

McCallum is now working toward an additional associate degree, in general science. She takes three courses online through Austin Community College so she "can call up courses at 4 in the morning, if I need to."

She also works in the bioscience lab and does contract work for 20 or more hours per week with a start-up biotechnology company located near the Highland campus. She continues to work as a waitress, although for fewer hours than in the past.

It's a grueling schedule, and she admits she had second thoughts about continuing after obtaining her first associate degree.

"I almost took a break after I got that degree, but my son (Jon) said: 'No, don't stop.' He thought I'd get a job and get into the workforce and not have the same commitment," McCallum said.

But now that the end is in sight for her career at Austin Community College, she's thinking of higher goals.

"I would love to apply to college and maybe get a bachelor's degree," she said. "I would love to go to UT. We have a family legacy there." Her grandfather was a professor at the University of Texas, and son Jon has two degrees from the university.

Stories like McCallum's are inspiring — to the leaders at her college and to her family.

"These students, I don't know how they make it," said Richard Rhodes, Austin Community College's president and CEO. "It's sheer tenacity and grit. They really have to want it to overcome unimaginable barriers."

Jon McCallum, Marcia's son, said that "seeing my mom go through school after having raised four kids and essentially starting over is a kind of testament to how hard work and persistence can really pay off. From what I can tell and I can see, she's a success, no matter how long it took."

Marcia begins to choke up when she thinks of what she's been through.

"It's been ... well, I can't even put it into words," she said, as tears welled up in her eyes. "It's a feeling that gets stuck right here," McCallum said, pointing to her heart.

Austin Community College President Richard Rhodes has overseen countless innovations at his institution, including the college's ongoing effort to repurpose an abandoned shopping mall. Still, Rhodes is quick to credit ACC students themselves as the architects of their own success, praising their "sheer tenacity and grit."

Chris Mulford, 23, worked on Apache helicopters while deployed to the Middle East as a sergeant in the North Carolina Army National Guard. He's now working toward an associate degree in engineering at Central Piedmont Community College. He also works part time in the college's fabrication laboratory, operating machines such as this programmable engraver/laser cutter.

“I wanted something more for my future.

Chris Mulford

CHARLOTTE, N.C. — Chris Mulford was deployed to Jordan and Kuwait with the North Carolina Army National Guard when he decided he needed to plan for the future.

An aviation electrician, he spent his days maintaining the Apache helicopters used to support missions into Iraq. That's when he began to realize the skills and knowledge he had acquired in the military wouldn't easily transfer to the civilian economy and air fleet.

"While I was working on aircraft overseas as an aviation technician, I didn't feel like there was much upward mobility. It wasn't career-worthy," he said. "I wanted something more for my future."

He also knew he didn't want to perform jobs like carpet cleaning, which he used to do at night during his time before he enlisted in the military.

"When you have a few jobs that are low-skill, manual labor, you decide you don't want to do that for the rest of your life," he said.

While overseas, Chris went online to start searching for training and education programs in the Charlotte, N.C., area. That's how he discovered a Central Piedmont Community College program, new in 2015, that would allow students to train at CPCC for two years and then transfer to the University of North Carolina-Charlotte to complete a bachelor's degree in mechanical engineering.

"So, I decided to go for it and get a degree," said Chris, 23, who had enlisted in the National Guard while attending high school in Monroe, N.C.

After returning to North Carolina from overseas deployment, Mulford began to take full-time classes in the spring of 2016. As with many returning students with a gap between high school and postsecondary training, Mulford faced a daunting challenge in math classes.

"I hadn't taken math and sciences in high school because I hadn't challenged myself," he said.

But the discipline and maturity he gained during his military service helped him persevere and advance through an increasingly challenging math curriculum, he said. Mulford is now dual-enrolled in the associate in engineering program and in CPCC's mechanical engineering and technology program. He also works part time in the school's fabrication laboratory. It's a heavy schedule, one that keeps Mulford at the downtown Charlotte campus 10 to 12 hours most days.

But, as a full-time student, he qualifies for significant military benefits. The post-9/11 GI Bill covers 50 percent of Mulford's tuition and pays a book stipend of $300 per semester. He also receives about $750 per month in a housing subsidy, which made it possible for him to move out of his parents' home near Charlotte recently and into his own apartment.

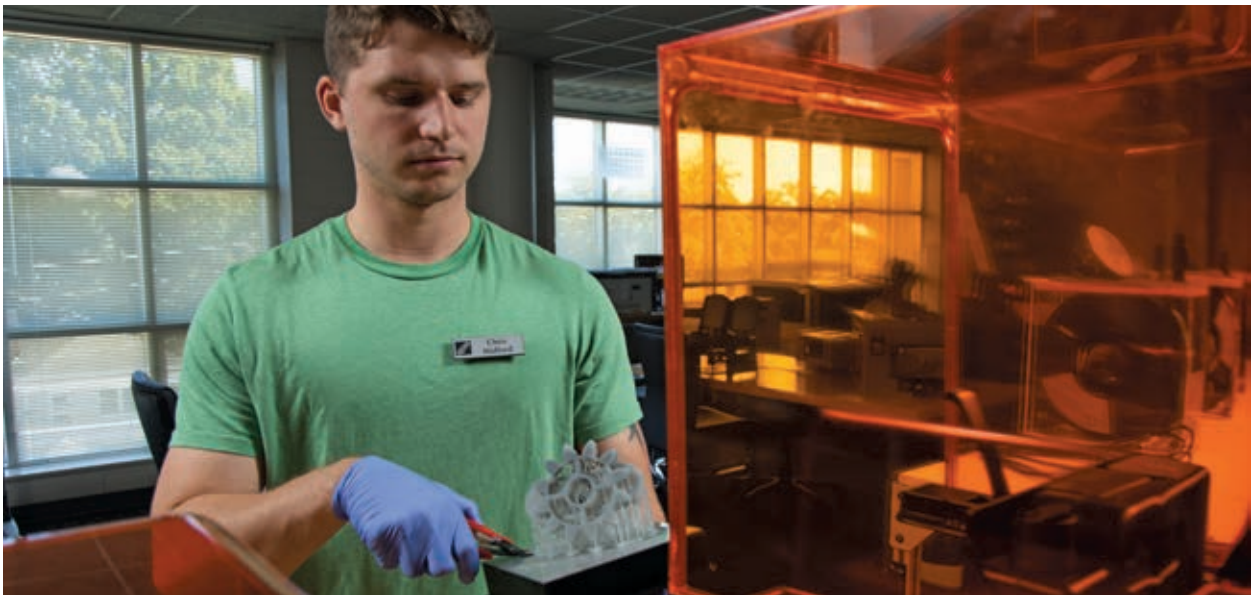
Other scholarships help him cover the remaining tuition costs, he said. Central Piedmont, like many community colleges, is very supportive in helping returning veterans identify and secure financial assistance, he said.

A sergeant in the Army National Guard, Mulford must honor his service commitment through September 2018. By that time, barring a recall to active duty, he expects to have completed his courses at CPCC and started engineering classes at UNC-Charlotte.

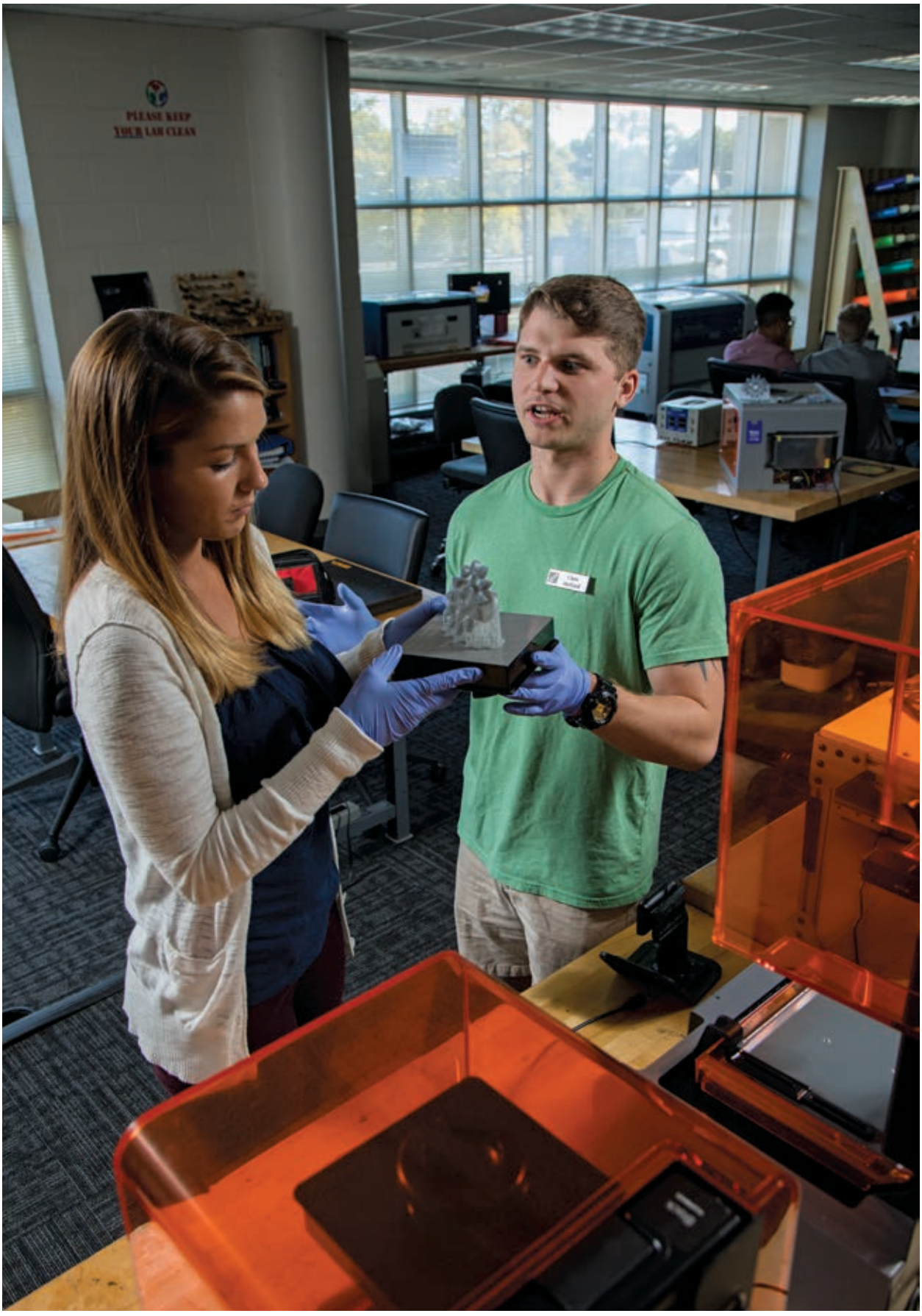
"The GI Bill and community college veterans departments are great resources for transitioning veterans," Mulford said. "Many of us could not successfully complete a degree without them."

Asked what he wants to do after college, he said he is undecided. But given his history and experience, he may well return to the field he knows best.

"My primary interest is aviation," he said. "My experiences have given me a goal: a new career."



Prior to enlisting in the Guard, Mulford had plenty of jobs that taught him the value of education – including a night job cleaning carpets. "When you have a few jobs that are low-skill, manual labor, you decide you don't want to do that for the rest of your life," he says.



In his role as an assistant in Central Piedmont's "fab lab," Mulford advises fellow student Kristina Moralic as she works on a 3D printer project. Mulford's military service ends in September 2018, by which time he hopes to be seeking his bachelor's degree in engineering at the University of North Carolina-Charlotte.

Seattle Central College President Sheila Edwards Lange (below) talks with Maliaka White, a 39-year-old student who's due to graduate in the spring of 2018. White, who also works part time for the college's nonprofit foundation, has an understanding mentor in Lange. Just like White, Lange restarted her own academic career after taking a break to work.

“I always felt I had the potential to do more.

Maliaka White

White takes a break with her daughters DaVonne Davis (left), 17, and Nieela Davis, 12. The girls, who consider their mother a great role model, look forward to next spring, when DaVonne is due to graduate high school at the same time White earns her associate degree from Seattle Central.

SEATTLE — Maliaka White was scared. A single mother of two, she suddenly found herself out of work. That's when she decided she would try again — for the fourth time — to further her education.

"It was the scariest time of my life," recalled White, now 39. "I'd never been out of a job before. It was a point when I was at rock bottom."

White had worked 14 years in a variety of roles for Bank of America before deciding to leave when it became clear to her that her lack of a postsecondary degree limited her opportunities and income at the bank. She then took a supervisor's job with the government of King County, Washington, but two days before her probation period was to end, she was laid off.

Suddenly, she had no steady income from a job — but she did have unemployment benefits, and that helped. So did the fact that her two daughters were then old enough to need less supervision.

White decided to take the plunge. In the winter of 2015, she enrolled at Seattle Central College. She's now on track to graduate with an associate degree in the spring of 2018.

"I was kind of embarrassed to come back to school," she admitted. "But I always felt I had the potential to do more."

That potential went unrealized for decades — though White had taken a few faltering steps into higher education prior to this one. Her first attempt was also at Seattle Central, where she enrolled at age 19. It was there that she met the father of her two daughters, DaVonne, now 17, and Nieela, now 12. White admits that at that time she "didn't have a clear educational focus." She ended up dropping out after she became pregnant.

During her time at Bank of America, she "always had the desire to get an associate degree." She started and stopped school two more times while she was working at the bank. Those two attempts — one at Seattle Central and the other at a for-profit school that's now out of business — didn't work out, in part, because she couldn't afford child care.

That's a challenge many students face: how to live their lives and go to school.

"It's often the life circumstances that get in the way" of continuing education, said Sheila Edwards Lange, president of Seattle Central. Lange said the average age of a Seattle Central student is 28.

Yoshiko S. Harden, vice president of Seattle Central, said many of the community college's students have "a margin of error that is so narrow."

"You have your funding, your classes, your car, your apartment. One of those falls, and it's a house of cards," Harden said.

White's school experience has been different this time because she's taken advantage of the counseling and mentoring available to her. She also has a job in the college's administration office. She started there working at the front desk and has been promoted several times to more advanced assignments. She now works for the Seattle Central Foundation, putting in 15 to 20 hours a week.

This time, the fourth time, everything is working out, she said.

"First, there's maturity. I'm much more focused now," she said. "My kids are older. They can take care of themselves. And I'm fortunate to work here, too, and they make my schedule flexible. And my counselors help me every step of the way."

One of those watching every step is President Lange, whose office is just down a hall from where White works.

"She's incredibly talented," President Lange says of White. "Although she's faced a lot of life challenges, she's highly motivated and a self-starter. She's a professional. Not all of our students are as polished."

White hopes to continue her education by seeking a bachelor's degree in public affairs at Seattle University, which is located five blocks south of Seattle Central.

But for now, White is looking forward to a celebratory spring next year, when she graduates from Seattle Central and her daughter DaVonne graduates from high school in Renton, Wash., south of Seattle. The entire family will celebrate, including the girls' father, who has given some financial support, helped with parenting and "has been very encouraging about me finishing my degree," said White.

She will also celebrate with her larger, extended family at Seattle Central.

"When I graduate, I'm just not graduating for myself," she said. "I'm graduating for this (administration) office. Everyone here helps."

Harden said the college works constantly to remove barriers for students like Maliaka White and make it easier for them to finish. Counseling, financial aid, transportation, and flexible scheduling all contribute to students' success, but the students' determination is a critical factor, she said.

"At graduation, when students walk across that stage, it's heroic," Harden said. "To successfully get through the system isn't easy."

Seattle Central College Vice President Yoshiko Harden (left) confers on campus with student Khanh Nguyen Thuy Le. Harden says she and her colleagues work hard to help students succeed. "At graduation, when students walk across that stage, it's heroic," she says.

José Cancino (below), 26, collaborates with classmate Saqib Domki, whom he met in GED classes at Austin Community College. Domki held a high school diploma but used the classes to prepare for ACC. The two plan to complete classes at ACC and move on to Texas A&M University to earn bachelor's degrees in engineering. That prospect all but amazes Cancino, who dropped out of high school and spent his early 20s doing odd jobs.

“He’ll be the engineer he wants to be.

José Cancino

AUSTIN, Texas — Sometimes it just takes a change of scene to change a life. Just ask José Cancino.

In 2015, Cancino was a high school dropout doing odd jobs in carpentry and landscaping in suburban Chicago when his mother got a new job in Austin, Texas. Now, 18 months later, he's preparing to earn an associate degree at Austin Community College and advance to the engineering program at Texas A&M University in 2018.

"I never thought I'd be pursuing an engineering degree. My family can't believe it either," Cancino said. "My family back in Chicago can't believe it either. Everyone is pretty excited."

Now 26, Cancino left Waukegan High School in suburban Chicago without finishing. His parents made it clear that if he wasn't going to school, he needed to work. So Cancino spent six years working in restaurant kitchens and taking carpentry and landscaping jobs.

"I was a teen-ager back then. I knew everything," he said, remembering his first years out of high school. "I guess it was rebellion or whatever."

He also admits he "wasn't hanging out with a good crowd."

"I wasn't happy, but I was complacent," he said. "If I had stayed in Chicago, I wouldn't be doing what I'm doing today. It (the move) got me away from everybody."

He had started classes at College of Lake County in the fall of 2015 — just before his mother got a job as a systems analyst at a firm near Austin and the family decided to move south. Once in Texas, Cancino began to re-evaluate his priorities, particularly in light of his experience as a landscape worker.

"When I moved here, I took a look at my life and said, 'Do I want to work at jobs like this until I'm 40?'" he said. "Texas is pretty hot, so I sure didn't want to work in the sun."

He learned about Austin Community College and enrolled in courses to complete his GED, which he finished in 2016. He then started working toward an associate degree, going slowly at first because he had to pay out-of-state tuition. He took a job at a grocery, and the pay stubs he saved over a year of work helped him prove his Texas residency.

With in-state tuition, the cost of each class dropped from $1,200 to $360, which he covers with the help of a Pell grant, an Austin Community College scholarship and another scholarship he received because he proceeded straight to college after earning his GED.

Then, he learned about a program new to Austin Community College. Starting this fall, the Austin college has joined other schools in the Texas A&M Chevron Technology Academy. Students accepted into

David Fonken, dean of mathematics and science at Austin Community College, has high hopes for Cancino – and plenty of confidence in him. "He's on track now," Fonken says. "All he needs to do now is do the work, and he'll be the engineer he wants to be."

Cancino works on the ACC campus with Shana Shaw, an associate professor in Texas A&M's engineering school. As a student in the Texas A&M Chevron Technology Academy, Cancino is on track to earn a guaranteed spot in A&M's engineering program.

the program at the community college level work toward their associate degrees while also taking introductory engineering courses taught by Texas A&M faculty. If they finish the program in good standing, they are guaranteed a spot in the A&M engineering program at the College Station campus.

The program thus offers students a clear path to A&M and a way to save thousands of dollars by getting their first two years of training at a community college, said David Fonken, dean of mathematics and science at Austin Community College.

"He's on track now," Fonken said of Cancino. "All he needs to do now is do the work, and he'll be the engineer he wants to be."

Cancino remains surprised by his good fortune. The admissions process for the program was competitive, he said. And at the time he applied, he had only four credit courses on his transcript. In addition to filling out the basic application and submitting his transcript, he had to write three essays — one on why he chose the program, another on his career and life goals, and a third to explain his interest in engineering.

"I just told them I wanted to be the best individual I could be," he said. "I also told them I want to change the automobile industry" by making vehicles more environmentally friendly and improving self-driving technology.

Cancino is taking 13 credit hours, including the A&M engineering course, while working up to 20 hours a week at a grocery. His goal is to finish the ACC program in 2018 and begin studying at Texas A&M in 2018.

He knows it'll take hard work and likely some financial assistance for him to make the grade at A&M. But he's committed to giving his best effort, and he said the people at Austin Community College are committed to seeing him and his 67 colleagues in the engineering program succeed.

"I'm hanging in there," Cancino said. "It's difficult taking a full schedule of classes, and this engineering course is kicking my butt.

"The people here are very friendly, and they work with you," he said. "They want people to get a certificate or degree or transfer to another institution. But it's up to the individual." ●

If you have employees who are bright ... why not train them?

Lukas and Nick Kwiatkowski

Nick Kwiatkowski (left), 23, and his 22-year-old brother Lukas stand in the entry area of the Blum manufacturing facility in Stanley, N.C. The Blum site is where both brothers took advantage of Apprenticeship 2000, a program designed to develop the skills needed for careers in advanced manufacturing. The program combines classroom work at Central Piedmont Community College with hands-on training at sites such as Blum.

STANLEY, N.C. — Nicholas Kwiatkowski gave his younger brother, Lukas, his first job. Lukas later returned the favor, showing Nick a path to a career. The brothers followed very different routes to the same destination: the Blum Inc. factory in Stanley, N.C., and the Apprenticeship 2000 program.

Lukas signed up for Apprenticeship 2000 — which develops the technical skills needed for careers in high-tech manufacturing — while attending East Gaston High School in Mount Holly, N.C. That's the usual entry point for most Apprenticeship 2000 students: Charlotte-area high schools work closely with the program's recruiters to identify promising prospects for the apprenticeship.

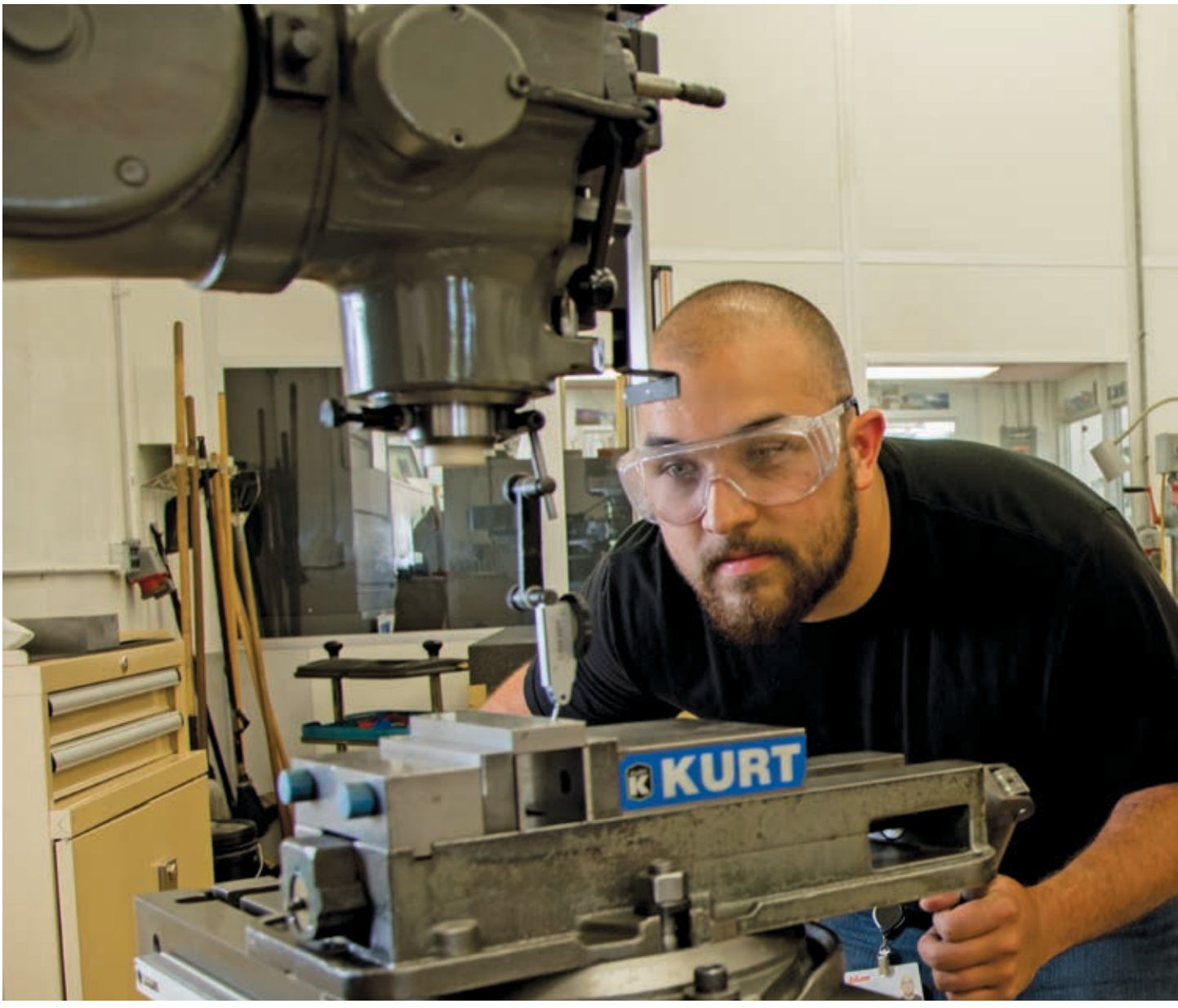
Nick followed a much different path. He decided not to pursue further education when he graduated from high school in 2012. Instead, he managed an Italian restaurant for more than six years during and after high school, and hired Lukas to help out.

"I wasn't really sure what I wanted to do when I graduated from high school" in 2012, said Nick, now 23. "I didn't think it was viable to go to school, waste money, pile up student debt and not know what I wanted to do."

But when Nick learned more from his brother about Blum — a manufacturer of high-tech latches, hinges and slide components for cabinetry — he decided it was time for a change. Nick applied for a job when Lukas told him Blum was looking for a press operator. He ended up applying three times before Blum hired him, with a recommendation from his younger brother.

"I had to talk to some people to help get him a job," said Lukas, 22. "I said, 'He's a good worker. Let's give him a shot.'"

Nick became a team leader within his first months after starting in May 2016. He had higher goals. As a regular employee, his prospects for advancement were limited, Nick said. But if he could get into the Apprenticeship 2000 program, the possibility of promotions and



higher pay in future years would be greatly enhanced.

Nick had to be employed for a year before he could apply for the program. He was accepted into the program in 2017, a year after Lukas completed his apprenticeship.

The program

Apprenticeship 2000 was started by Blum in 1995, in conjunction with Daetwyler Corp. of Huntersville, N.C. The program's goal is to offer technical career opportunities to high school students (and some exceptions, like Nick) and employment after graduation. Over the years, other Charlotte-area companies have joined the program, including Ameritech Die & Mold, Chiron and Pfaff.

The program is the only one of its kind in the United States to require 8,000 hours of training and education, including 6,400 hours at the employer companies and 1,600 hours of classes at Central Piedmont Community College. At graduation, an apprentice receives an associate degree in mechatronics engineering and is awarded a journeyman's certificate by the North Carolina Department of Commerce.

Andreas Thurner, the apprenticeship manager at Blum, said Blum and other member companies are strong believers in the apprenticeship model, which has been used for decades in Europe. Blum, based in Austria, has had a presence in North Carolina since 1979. Its CEO is the product of the company's apprenticeship program in Europe, Thurner said.

"Our job is to build the next strong workforce," said Thurner. "You can have the best equipment in the world, but it's worthless if you don't have the right people on it."

Blum's financial commitment to the program demonstrates how important it is to the company's culture. The Stanley factory, located about 20 miles northwest of Charlotte, has $1.8 million in equipment in its training area, and three full-time trainers.

Under the watchful eye of trainer Tim Ballard, Nick Kwiatkowski operates a high-tech drill press at Blum. Kwiatkowski started at the company in 2016 and entered the Apprenticeship 2000 program a year later, seeking to improve his prospects for advancement.

Andreas Thurner, Blum's apprenticeship manager, works with student Beau Pray at the firm's machining training center. Pray is one of 17 apprentices in the four-year program at Blum – and among 42 now participating in the Apprenticeship 2000 program at firms in the Charlotte area.

Thurner said that each apprentice represents a $175,000 commitment from the company. That includes pay and benefits for the apprentices' four years of work and study.

With that level of investment, Thurner works hard to recruit and identify the right kind of students for the program. He starts with introductory sessions at the local high schools that are involved in the program. Interested students are then invited to an open house, and those still interested attend four orientation sessions. At that point, Blum conducts a six-week training session, which combines company training and course work at Central Piedmont. Only after extensive reviews are the final choices made for the apprenticeships.

While an apprenticeship and the commitment it requires might not be right for everyone, "it really is a great alternative for those who are hands-on and smart," Thurner said.

Nick remembers about 20 people coming to his orientation sessions. Seven were picked for the pre-program training, and six were advanced to the apprenticeship program. Lukas said his orientation class of more than 20 was narrowed down to three who joined the Blum apprenticeship program.

"You do a lot of work, and you have to impress them to select you," Lukas said.

Thurner said there are currently 17 apprentices in the four-year program at Blum, and 41 overall in the Apprenticeship 2000 program. Since 1995, Blum has graduated 61 apprentices, and Apprenticeship 2000 has produced 164 graduates overall.

And although Blum does not require an apprentice to sign a contract to work for the company, some 75 percent of the apprentices Blum has trained in North Carolina were still with the company five years after graduating, Thurner said.

"We guarantee you employment. We guarantee you a salary of $36,000" at the end of the program, Thurner said. "Who does that? Who pays for your college and then gives them a guaranteed job?"

A similar apprenticeship program in the region, Apprenticeship Charlotte, is also very selective, said Jennifer Herndon, coordinator of workplace learning at Central Piedmont. This year, 85 people applied on the college's application portal. Thirty-eight applicants advanced to the summer pre-apprentice program, and 20 were selected to continue as apprentices this fall.

Apprenticeship Charlotte member organizations include Cummins Atlantic, Bosch Rexroth, CATS (Charlotte Area Transit Systems), HAWE Hydraulik, Siemens, Groninger and Mecklenberg County. As with the Apprenticeship 2000 program, most of the members of Apprenticeship Charlotte are companies with European roots and deeper experience with the apprentice concept.

"Having the European companies has given us national attention," said Herndon.

Thurner said he regularly fields inquiries from other companies interested in apprenticeship programs. The queries have come from 15 states, he said. But he added that some public companies balk at the investment required for each apprentice, seeing that as short-term expense rather than considering it, as Blum does, a long-term investment.

The life of an apprentice

For Nick Kwiatkowski, the apprenticeship program means long days. Four days a week, he's at the Blum factory from 1 p.m. to 11 p.m. He works and trains during those hours, and also puts in some overtime hours to help make up for the reduction in his hourly pay that he accepted to join the apprentice program. On Thursdays, he goes to the Central Piedmont campus in downtown Charlotte for course work from 3 to 6 p.m.

"Who would have thought that I would be looking forward to going to school" on Thursdays, he joked.

"I don't get very much spare time," he admitted. "It's pretty much go to work, come home, go to sleep, wake up and do it again."

Lukas tells a similar story. He started during high school, splitting time among his school, Blum and Central Piedmont. Later during his apprenticeship, he put in 40 hours each week at Blum and Central Piedmont, and worked another 40 hours for his brother at Geppeto's, the restaurant Nick managed.

"It's definitely a challenge," Lukas said. "There were points when I said, 'Forget it. I don't want to do this anymore.'"

Both the work and the training require great attention to detail, the brothers said. And the apprentices are regularly reviewed on their performance.

Thurner issues monthly assessments on each apprentice in eight key areas: quality, job knowledge, efficiency, dependability, initiative, adaptability, cooperation/team ability, and safety/housekeeping. Apprentices with excellent reviews can earn bonuses, he said.

Outstanding apprentices also are rewarded with a trip to visit Blum's facilities in Austria. Lukas made that trip before finishing his apprenticeship and becoming a full-time tool and die specialist at the North Carolina factory.

Despite the long hours and demanding standards in the program, Nick is confident he made the right decision in joining Apprenticeship 2000. He believes in the concept, and he's certain he's made the right choice for his career.

"Honestly, I'm surprised not more companies do this," Nick said. "Hiring outside people with a degree is OK, but why not invest in what you have? If you have employees who are bright and can be trained, why not train them?

"I'm sure there are tons of people out there who would like to have the chance to go through a program like this," he said.

While he won't finish the apprenticeship until 2021, he is already starting to think about his options for the future. The choices look good, he said. He could take a guaranteed job at Blum. He would have a credential that could get him employment elsewhere. Or he could continue his education.

"I was pretty excited when I got into the program. Right now, it's kind of tough with the pay cut. But when I get done, it's pretty much a career," he said.

"Maybe one day I would go on" for a bachelor's degree, he said. "That's not something out of the grasp for me."

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November 2017

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Photography: Shawn Spence Photography • **Design**: IronGate Creative • **Printing**: Think Patented