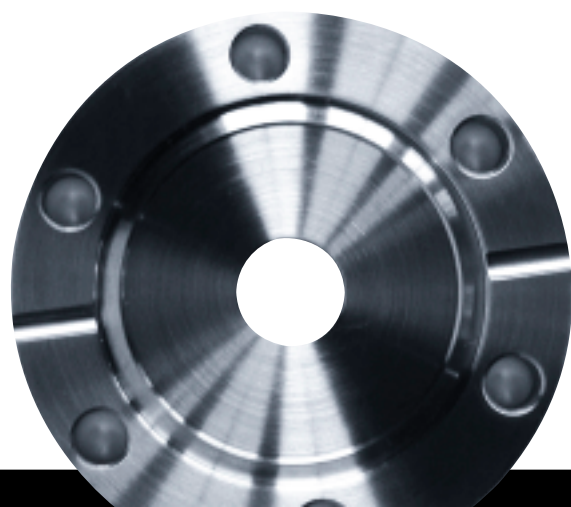
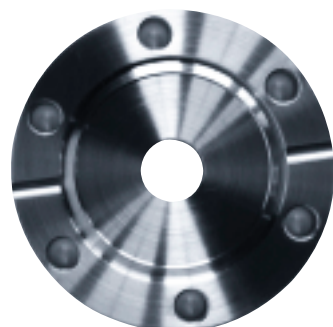


RETOOLING THE

WORK




*By Michelle Pilecki
Photography by Annie O'Neill*

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FORCE

Identify which industry slot the Kurt J. Lesker Company fits into by following the clues: high ceilings above its white-walled and dust-free 33,000-square-foot work floor, classic rock competing with country songs to mask the hum of machines, and rows of computers—most the size of small trailers—operated by some 50 intense but casually clad workers from their 20s on up.

OK. Which industry slot is it?



Manufacturing. Surprised?

This high-tech hot-spot is one facet of western Pennsylvania's best-paying sector and the second-largest employment sector in the region. Those young faces present yet another. Since 1997, more than 550 Pittsburghers—displaced older workers as well as adrift twenty-somethings—have been trained and placed with dozens of local companies just as eager for smart, skilled employees as the trainees are for high-paying jobs promising bright futures. But they're not the only winners: the \$7.1 billion-payroll manufacturing sector strengthens the regional economy by retaining more of its best workers and companies.

Executing this algorithm is New Century Careers, a public-private consortium funded by The Heinz Endowments, other regional foundations and the public sector. Like an elegant mathematical proof, the formula looks easy, even obvious once explained, but it has taken a lot of creative work to add the numbers, subtract the stereotypes, multiply the possibilities and divide the benefits.

While there's really no such person as a "typical" New Century participant, Chas Cooley comes close.

"I had no idea what I wanted to do with my future," admits the 1996 Baldwin High School grad.

Michelle Pilecki, former executive editor of Pittsburgh Magazine, has written and edited dozens of stories on western Pennsylvania's economy. This is her first story for h.



Kurt J. Lesker Co. machinist Jeff Brandt steadies a cylinder for an industrial vacuum chamber as a co-worker makes adjustments at its top. The West Mifflin native is a graduate of Duquesne University's Workforce 2000 training. He's one of many success stories coming out of a foundation-community effort to build a high-tech workforce for a demanding manufacturing sector.

Chas Cooley, another Kurt J. Lesker Co. employee, works on a CAD-CAM (Computer Assisted Design/Computer Aided Machining system) to set the template of instructions for a tool that will manufacture metal cylinders for a vacuum component. Cooley is one of the New Century Careers training graduates who has worked his way up from traditional machining tools to sophisticated computer programs. On the right, finished parts await shipping.

The son of a single mom, he says “money was real tight” so instead of college he entered a series of outdoor jobs that offered more perils than promise. Falling out of a tree he was pruning made the then-teenager worry about his prospects “if I got hurt.” A bike-messenger job was no improvement. “When your job hazards include getting hit by a bus,” he says, “I figured I had to get an inside job if I wanted kids—and a life.”

Two of his buddies, including his current West Mifflin roommate, Jeff Brandt, had graduated from what was then known as Manufacturing 2000 (M2K). Applying wouldn't cost anything—“that was a big point,” he admits—and after a rigorous screening and testing process, he entered the 20-week course in 2000 for 550 hours of training as an entry-level machinist. He was introduced to the lathe, mill and drill press to learn the “manual” or traditional side of machining, with 25 hours devoted to an introduction to high-tech, high-precision manufacturing using computer-directed machining tools.

Now he's programming them. After following Brandt to Lesker two and a half years ago, Cooley worked his way up

from washing parts, to various machining jobs, to an office at the Jefferson Borough manufacturer of high-tech vacuum chambers. “Most of my job consists of taking the engineers' drawings and making the machines do the work, plain and simple,” says the 25-year-old. Not so plain, nor simple. Some Lesker product specs are measured in angstroms—an angstrom being 0.000000039 of an inch.

Cooley works on computer-connected machinery to “transfer the design concept into a tool path in machine-tool language,” explains John A. Ross, executive vice president and chief financial officer of Lesker. A machinist then uses Cooley's program to produce the finished piece.

This is not your grandfather's machine shop. Gone is the dirty, dangerous, crowded factory. Also gone are the unskilled jobs, but they've been replaced with jobs for highly motivated, specially skilled machinists and welders. “We're not employing machinists anymore,” says New Century President Barry Maciak. “We're employing skilled technicians with significant mathematical and design expertise.”

Producing such highly trained and specialized workers and getting them into factories is New Century's reason for being.

“WE'RE NOT EMPLOYING MACHINISTS ANYMORE. WE'RE EMPLOYING SKILLED TECHNICIANS WITH SIGNIFICANT MATHEMATICAL AND DESIGN EXPERTISE.”

Barry Maciak President, New Century Careers



“It was relatively clear what the problem was, but what was not clear was the solution,” says Brian Kelley, director of the Endowments’ Economic Opportunity Program. The foundation community provides, he says, “venture capital money in the social venture capital sense.” The Endowments has continued to build community programs to train and place workers for local manufacturing. On the human level, says Kelley, that means Pittsburghers get good jobs at good companies and a chance at a good life.

Like Jeff Sommer. After graduating from Brentwood High School in 1993, he dropped out after one semester at the Community College of Allegheny County. Then came a succession of low-paying jobs—cashier, busboy, maintenance man—until one day when there was a flier for a new job training program in with the mail. He was among the 18 graduates of the first M2K class that started in March 1998, and “I could have been hired on the spot,” says Sommer, referring to the power of the program’s job fair. He had three interviews and chose Aceomatic, now ATC Distribution Group Inc. in McKees Rocks, which rebuilds parts for companies that rebuild car and truck transmissions.

Primarily he works in quality control of the rebuilt torque converters, checking the nature of defects on returned parts. “I’m a floater, go where I’m needed. I may weld half the day, work the machines,” he says. “I have to know every aspect of the product and the shop.”

The 28-year-old is well established in his career and confident in his prospects in the current economy. His high school buddies aren’t. One, he notes wryly, has a college

degree in finance that he uses to add up his tips from delivering pizzas.

Many New Century students have at least some college experience, says Paul Anselmo, director of services for the program and one of its cofounders when he worked at Steel Center Area Vocational-Technical School. At least 70 percent of today’s jobs require some technical training, he notes, but only 7 percent of students go to vo-tech schools. Most are funneled into college, whether they want it or not.

Like Chad Toulouse. The Fort Cherry High School grad went to Pitt-Johnstown for a while because he’d been told “you have to go to college if you want to make money,” he says. With an undecided major and an undecided future, the McDonald native was working in a gas station when he signed up for the program’s second class. He started as a machinist trainee at the Bridgeville location of Texas-based Flowsolve Corp. in August 1998. The shop makes parts for industrial water pumps for such facilities as nuclear power plants.

“Right now, I’m the group leader, the floor boss,” says the 25-year-old.

While a lot of the New Century students are young, the program also attracts many displaced workers. “I worked as an auto mechanic for about 15 years,” says David Wain, 34, a graduate of the program’s most recent class in March. The West Mifflin man found himself unemployed for the first time in his life when the Pennsylvania Auto Center closed last year. For more than six months, he looked for a job and found “a bunch of nothing.” Then he saw the New Century ad. Wain



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Jeff Sommer ATC Distribution Group machinist and Manufacturing 2000 graduate

likes fixing cars, and it was tough to think about starting at the bottom again. He and his wife, Jennifer, would have to depend upon her income as an Allegheny County corrections officer to take care of the house and their 12-year-old son.

Wain took the plunge. At the program-ending job fair, he had four leads. “That was on Wednesday. Graduation was Thursday. Monday, I made some more calls, had interviews on Tuesday, and got a job offer on Wednesday.” He had more than one offer, and went with W.W. Patterson Co., a North Side maker of winches for the barge industry.

“So far I’m liking it,” he says. “Every day I’m doing different stuff.” Sometimes that means running large presses, sometimes it means assembly work. “Starting out, the money is not what I’m used to, but time will tell.”

Time has told a pretty good story so far for New Century Careers: Some 150 to 200 students every year graduate from about 20 classes offered annually in machining and welding, at both the basic and advanced levels, at nine sites in Allegheny, Armstrong, Beaver, Butler, Fayette, Somerset, Washington and Westmoreland Counties. The graduation rate is more than 80 percent, and 70 percent of graduates are hired immediately. And they stay: The retention rate is 80 percent, says New Century spokeswoman Molly West.

“It does a remarkable job meeting the needs of both” the trainee and the employer, says Michael Kane of the Massachusetts-based Mount Auburn Associates, the economic consulting firm evaluating the program for the Endowments. His most recent report (2002) says New Century “compares rather favorably” with similar job-training programs around the country, such as the Annie E. Casey Foundation’s Jobs Initiative in Milwaukee, New Orleans, Philadelphia, Saint Louis and Seattle; and the Charles Stewart Mott Foundation’s 10 workforce projects. Those programs reported completion rates of 77 percent and 43 percent respectively, and placement rates of 73 percent and 84 percent, with average hourly wages of \$8.83 and \$9.73, compared with \$10 for New Century grads.

Much of the program’s success, says Kane, comes from an “ability to make adjustments . . . [in] a continuous feedback-and-learning loop.”

“What the various foundations have enabled in southwestern Pennsylvania with New Century Careers is an iterative community-based process to solve a complex set of problems, and a key set of foundation stakeholders has had the patience to see it through,” says the Endowments’ Kelley. The process started in the mid-90s, when Maciak (executive director of Duquesne University’s Institute for Economic Transformation and managing partner in the uptown-based consulting firm World-Class Industrial Network), Anselmo and others in workforce development met with representatives of community groups and 17 manufacturing companies in the Mon Valley and Pittsburgh. The biggest problem: a shortage of skilled workers.

“Early on, it became clear that filling such a need wouldn’t be easy,” Kelley says. “You have everything from the outdated image of manufacturing to who’s interested in this kind of job to building relationships with highly dispersed small manufacturing firms to recruiting. You have a whole series of ‘now here’s the next thing, how do we deal with that?’ ”

Thus evolved an employer-focused training program, known first as Manufacturing 2000 (the new century still being a few years away in 1997). The Endowments provided \$400,000 to survey potential employers, research ways of reaching potential employees, connect with schools and guidance counselors, and put them all together to create “a human capital marketplace.”

John Elliott, of the Elliott Marketing Group in Bethel Park, continues to collect and process data to hone the process of getting prospects to call an 800 number, receive an information package and attend an informational seminar, where prospective students learn about modern manufacturing, the training program and the prospect of earning \$45,000 to \$50,000 a year with experience. Applicants are rigorously screened in an application process not unlike that for college, including high school transcript (a GED at a minimum), references and tests. ATC’s Sommer recalls a three-hour exam covering math, mechanical aptitude and more.

“We decided the curriculum side had to be quick,” Anselmo recalls. Lou Pavsek, a veteran Steel Center teacher,





ATC machinist Andy Jameson, 26, works one of the more traditional machining tools, cutting apart torque converters that will be rebuilt and sold to vehicle parts distributors around the country. The New Century Careers graduate has been on the job six months and loves the hands-on labor. ATC is typical among smaller manufacturers for its mix of conventional and high-tech equipment.

ATC Vice President Ned Eldridge talks with New Century Careers graduate Mike Chartrand, who works in the plant's Hard Parts division. One of the original employer sponsors of Manufacturing 2000, Eldridge believes the training programs are essential to the survival of smaller manufacturers in southwestern Pennsylvania. At right, New Century graduate Shawn Hochendoner assembles finished converters for shipping at the clean end of ATC's necessarily noisy floor.



\$1.5 million comes from the U.S. Department of Labor, the Pennsylvania Customized Job Training program, company fees for advanced skills training and various training contracts.

Ned Eldridge is one of New Century's most satisfied customers. "We hired two of the very first graduates, and they're still with us," says the ATC vice president. "We've

distilled the basic skills into a "boot camp" approach of 525 hours, now 550 hours. He also taught the first class, and has taught every semester since. Besides the basics of machining, students also learn how to write and polish a resume, go through the interview process and learn basic workplace skills like consistency and attendance, says Ken Nesbit, New Century's student support and placement coordinator.

While there are no monetary costs for students, there are commitments: good attendance, regular projects, development of a work ethic, a final exam. The reward is a good-paying job with one of the participating companies, which now number more than 250. The cost to those companies is \$1,250 for each graduate they hire. That just about covers recruitment and placement. Training each worker actually costs about \$8,000, a sharp drop from the original \$12,000 per student, according to the Mount Auburn report. (But the goal is to bring that down even further to the \$5,000–\$6,000 range.) The difference is made up by outside funders. About 40 percent of New Century's \$2.5 million budget this year comes from foundations: the Endowments and the Benedum, Pittsburgh and Richard King Mellon Foundations. The remaining

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Ned Eldridge Vice President, ATC



“We assumed that our challenge was going to be changing the image people had of manufacturing: a dangerous, dirty, noisy place to be,” says Maciak. “Most manufacturing now, because of the quality standards, is relatively clean; it is very safe, there’s a good living to be made and there are a lot of opportunities for career development.” Those were the issues to stress to teachers and parents. But for the young workers being targeted,

probably hired over 30 graduates of the program, and still have at least 22 or 23 of them.” ATC made sure it was represented at the program’s most recent job fair. “We expect to hire two or three additional people,” Eldridge says, adding to a staff of 86 hourly production workers.

The 80,000-square-foot ATC machine shop meshes better with most Pittsburghers’ image of manufacturing. Most of the machining work is manual, not on fancy computer equipment, and you have to speak up to be heard, though most of the workers are actually listening to radios or personal stereos. But although the decor is your basic grunge, the place is surprisingly clean, given that transmission parts salvaged from junkyards around the country is the raw material. Each part must be cut in half, separated into parts, re-machined and put through several washings before reassembly. On the larger part of the floor, 50 workers deal with ATC’s main product, torque converters, “about 700 units a day, and it might be as many as 20 different part numbers,” Eldridge explains.

He has only praise for the program and its “pre-qualified” trainees. He’s just as pleased with Sommer as Sommer is happy to be there. As mundane as that sounds, it’s a minor miracle. Manufacturing has, to put it mildly, an image problem.

he continues, “They didn’t know enough about manufacturing or [had not] thought enough about manufacturing to have an image.”

Mike Harnish, 29, like his fellow New Century grad and Lesker co-worker Chas Cooley, has been promoted off the shop floor to join the 150 non-production employees. Now starting his fourth year at Lesker, the Leechburg native has a more practical edge since his days as a guitarist–singer hoping to take his local band to fame. Now, he works mainly on a computer as the company’s scheduler, tracking and juggling some 500 to 600 jobs a month. “They’re getting more complicated,” explains Ross. “Some are 400 hours long, some are 15 minutes long. Each has its own budget, delivery time. Mike keeps an eye on everybody.”

The Kiski High School grad had studied computer animation at the Art Institute of Pittsburgh, so he already was tech-savvy. He doesn’t just run the system, he helped to institute it, and new software being developed by Carnegie Mellon University will help him boost productivity even more. “It’s you against the numbers,” he explains.

It’s a long way from his alt-rock band, Sour Wine Cult. The former guitarist–singer didn’t see much future in the



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Lou Pavsek teacher, Steel Center

Lou Pavsek, a 16-year veteran of turning out capable, entry-level machinists, checks a student's work at the Steel Center Vocational-Technical School in West Mifflin. "There's no such thing as a typical New Century graduate," says Pavsek. Past students include a displaced bank vice president, a master's graduate in physiology and scores of young people looking for direction in life. "The sky is endless for these people because manufacturing is endless; it has so many faces," he says.

music world, went into electronics retail and was out of a job when the Sun TV chain went belly-up. He was still attending M2K classes when he talked with Lesker. "I was told I could have a job a month before training ended. I was hired a week after graduation."

Demand is still high, but different. In 2000–01, Maciak says, New Century couldn't provide enough trainees. But as the economy started to slow, demand for entry-level workers started to shrink, while the need for incumbent workers with advanced skills grew. Program managers responded with the public-sector supported "Manufacturing 2000 Plus," modules of advanced training that have attracted workers representing 160 companies to fill some 1,500 student slots since September 2001.

Ironically, the slow economy has given New Century some breathing room, since it wouldn't have kept pace with demand if the economy had continued to grow at the 1990s' explosive rates, Maciak says. Projections indicate that about 10 percent of local machinists (average age, 43) will retire every year for the next decade, he says, so that "as the economy turns around, we'll see that the demand [for entry-level workers] is more critical than during the boom years."

Fortunately, entry-level demand hasn't been as stagnant this year as the economy. Nearly half the New Century entry-level class that graduated in March was on the job a month later, with more awaiting word from prospective employers, says New Century's Nesbit. Of the 35 graduates, seven are African American and three are women. The participation of those under-represented groups has risen to 16 percent and 6 percent, respectively, of the total. That's an improvement over earlier years, largely because of Nesbit, who was hired three years ago with a grant from The Pittsburgh Foundation to help get more black Pittsburghers into manufacturing.

"I didn't have a road map," says the native of Pittsburgh's mostly African-American Hill District neighborhood. So he made his own, tailoring outreach programs to African-American communities with church meetings, announcements on

WAMO, one of the city's most popular black radio stations, a booth at the Juneteenth celebration and neighborhood billboards.

"The real problem is retention," he explains. Many "great students" need extra support services, sometimes as simple as arranging for childcare or transportation—and sometimes Nesbit has personally offered to drive. He recalls the story of the single father who needed a hand when his twin teenage sons became a handful. After getting a job through New Century, Nesbit says, "he bought his own house and a car for him and his sons."

The next step is a similar push to expand the job possibilities for women, who often are working in retail and service jobs paying only \$13,000 a year, says Sandra Zulawinski, manager of capital access for the Community Loan Fund of Southwestern Pennsylvania, a downtown-based nonprofit that assists small manufacturing companies. CLF was starting plans in the spring to recruit students for the Women in Manufacturing Initiative, funded with \$200,000 from the U.S. Department of Labor's Employment and Training Administration.

The program, which also involves Pennsylvania Women Work (part of Women Work!, the National Network for Women's Employment), aims to recruit 40 women for the fall class, provide support services like child care and guarantee them jobs with one of the 24 manufacturing companies that CLF has assisted.

Jobs, business opportunities, economic growth—what they add up to is not just changing the face of local manufacturing, but changing lives.

"I can further myself here," says Chas Cooley. Lesker has offered to help him continue his education in computers, he says. Without New Century, he concedes, "I'd probably still be at some labor job." Instead, "I'm making more money now than ever in my life. I hope to buy a house here. I like Pittsburgh, and I want to stay here." *b*