



Young companies such as ALung Technologies have helped to reinvigorate Pittsburgh's economy by implementing fresh ideas. They also attract youthful employees such as Scott Morley, 31, ALung's vice president of marketing, shown here with Sarah Frank, a quality engineer at Regulatory and Quality Solutions LLC.

Pittsburgh of the 21st century is not the city it was near the end of the 20th. Leaders from different sectors, including local philanthropies, crafted strategies that have improved the region's quality of life since the devastating collapse of the steel industry in the 1980s. Challenges remain, but the city is gaining a vitality and renewed optimism for the decades ahead. By David Golebiewski

REBOUND



urrounded by a transformed graveyard of a bygone industry, Scott Morley and a lab teeming with local college graduates breathe new life into patients—and Pittsburgh's economy.

"ALung is right here on the South Side, two blocks away from a former brownfield that's now the South Side Works [retail complex]," Morley says. "We're sitting in an old steelworkers neighborhood and working in an old printing company building that has been totally renovated for our high-tech manufacturing operation."

Morley, 31, is vice president of marketing for ALung Technologies, a medical device company born at the University of Pittsburgh and raised at Innovation Works, a business incubator supported by local foundations, government and private investors. When the Pitt bioengineering grad interned at ALung from May 2003 to April 2004, the company had nine employees. Now, with a staff of 40, the company is perfecting the Hemolung Respiratory Assist System, a dialysis-like machine that works as an "artificial lung" for patients with chronic respiratory problems.

"Like many Pittsburghers with family here, I wanted to stay local," Morley says. "I feel very fortunate to have the opportunity to stick around with a startup and get in at the ground level."

Today, Pittsburgh is increasingly trendy. Far from being a smoky steel town, the region has become a landing spot for young, educated and tech-savvy workers like Morley, who seek both promising careers and a satisfying quality of life.

More people have moved to Pittsburgh than have left the city since 2008, slowing the population loss. About 70 percent of workers who have come here are under age 35, according to a report released last year by PittsburghTODAY, a regional indicator program hosted by the University Center for Social and Urban Research. That infusion of youth, driven by opportunities in STEAM—science, technology, education, arts and math—fields, kept the region's economy humming during the recent financial recession.

The area's outlook is markedly brighter than it was 30 years ago, when the steel industry collapsed and young Pittsburghers left in droves. How did the Steel City avoid becoming a Rust City, instead emerging with a diverse, recession-resistant economy? Twenty-first-century Pittsburgh, like the Hemolung, was created in a lab. State government, technology companies, university innovators and foundations partnered to transform the region's core industries and support new economic opportunities. Conditions in areas such as air

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THE PITTSBURGH WORKFORCE: 70 PERCENT OF WORKERS WHO HAVE MOVED HERE ARE UNDER AGE 35

quality, urban education and workforce diversity are still less than desirable. But the region's achievements are now touted routinely in national publications and during major events that the city hosts, such as the international G20 and One Young World summits.

Helping to kick-start this evolution was then-Pennsylvania Gov. Dick Thornburgh's move in 1982, as the steel manufacturing crisis was accelerating, to establish the Ben Franklin Technology Partners. The initiative created four Advanced Technology Centers across the state to launch companies and retrain workers. Southwestern Pennsylvania's technology center later evolved into Innovation Works. The following year, the region's tech sector founded the Pittsburgh Technology Council, a trade association connecting companies with funders, qualified workers and government liaisons. Pittsburgh's philanthropic community—fourth-largest among U.S. cities in foundation assets per capita—also injected early-stage, high-risk and strategic capital into “eds and meds,” or university and medical research and innovation. Foundation investment in the arts helped to create additional economic building blocks.

“There are few communities in America, if any, that have the size, commitment and quality staff of Pittsburgh's foundation community,” says Jared Cohon, president of Carnegie Mellon University from 1997 to 2013 and a Heinz Endowments board member. “That community has been a major catalyst in the city's rise.”

Many foundations helping to rev Pittsburgh's new economic engine date back to the city's industrial heyday. While the region has changed dramatically since then, philanthropic organizations' fidelity to southwestern Pennsylvania has not.

“Heinz, R.K. Mellon, Buhl, Hunt, Benedum—most of them grew out of that time period, and they were committed to the Pittsburgh region,” says Frederick Thieman, president of The Buhl Foundation. “There's a deep sense of community rooted in the fabric of the people and foundations that remains today.”

1983: PITTSBURGH'S LOW POINT

For generations of Pittsburgh communities, steel was the foundation for economic prosperity. Rich coal seams and easily accessible rivers made Pittsburgh the nexus of the industry, which provided ample work. In early 1973, more than 300,000 people in the Pittsburgh metropolitan area had manufacturing-related jobs, and the 4.3 percent unemployment rate was half a percentage point lower than the national average, according to the U.S. Bureau of Labor Statistics.

In the 1980s, however, Pittsburgh's economic foundation crumbled. Foreign-made steel flooded the market, making domestic products uncompetitive. American “mini-mills” delivered another blow, producing smaller batches of steel from recycled scrap metal with lower overhead costs.

The demise of the steel industry crippled Pittsburgh's economy. By January of 1983, less than 200,000 people had manufacturing jobs, and the Bureau of Labor Statistics recorded an unemployment rate that had ballooned to 15 percent—far above the national rate of 9.6 percent. Major companies with Downtown headquarters—Gulf Oil, Rockwell International and Koppers among them—led a mass corporate exodus out of the city.

When the jobs left, so did many Pittsburgh workers and their families. In 1984, 50,000 people—roughly a sellout crowd for a Pirates game at

Three Rivers Stadium—left the region. Seventy percent of those departing Pittsburghers were under 40 years old, depriving the city of a generation's worth of talented young workers.

But the deep downturn was not permanent. The crisis began to resolve in the decades that followed, and today's young talent enjoy career opportunities rarely afforded to the previous generation. The city ranks among the nation's best in helping workers break into a higher income bracket than their parents, according to a 2013 study conducted by Harvard University and the University of California, Berkeley. Pittsburgh workers born to parents who make \$30,000 a year have a higher income than workers in the rest of the country's 50 largest commuter areas, save for Salt Lake City.

"From the beginning of your career, you can network and learn about new technologies," says Sarah Frank, a Pitt bioengineering graduate and a quality engineer at Regulatory and Quality Solutions LLC. "I have family and friends here, and I wanted to stay here. You can afford to save up for a house and a family, things you know you're going to want down the line. It sets you up early in life."

STARTUP INCUBATORS

To help achieve this transformation in opportunity and outlook, civic and government officials turned to the city's college neighborhood of Oakland as part of the effort to reinvent the region. The University of Pittsburgh, a leader in health sciences, and Carnegie Mellon, a robotics and computer science powerhouse, had long been bastions of world-class academic research. With support from local foundations and government, faculty and students began turning innovative concepts into job-creating companies.

"There was an understanding among Carnegie Mellon, Pitt and the foundation community about the importance of fueling technology

commercialization," Cohon says. "Foundation support allowed universities to invest in new research and teaching programs, producing ideas and inventions that are the basis for new companies."

Pitt and Carnegie Mellon partnered in 1999 to launch the Pittsburgh Digital Greenhouse, a business incubator for microchip technology that garnered support from foundations, state and local government, and private industry. The Pittsburgh Life Sciences Greenhouse was founded two years later, providing capital, investor connections and business mentors to nascent companies in the biotechnology, medical device and health care information technology fields.

Local foundations helped the greenhouses to get off the ground with investments that private sources considered too risky, says Mark Nordenberg, chancellor of the University of Pittsburgh.

"The importance of that early seed money cannot be overstated," Nordenberg says. "You need to have someone who will take a chance with you. One of the things that distinguishes Pittsburgh from other parts of the state and country is the willingness of foundations to get involved in early-stage initiatives."

That early support for business incubators has had a multiplier effect. The Life Sciences Greenhouse has invested \$20 million in startup companies, which have attracted \$900 million in additional capital.

"Pittsburgh became an attractive place to invest because there often were matching dollars coming from the foundation community that you didn't see many other places," Nordenberg says.

"The greenhouses were born as a model of how you use public-private partnerships to commercialize technology," says Dennis Yablonsky, founding CEO of both greenhouses and current CEO of the Allegheny Conference on Community Development.

Also helping to support budding entrepreneurs is Innovation Works, the public-private venture



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that has invested more than \$60 million in technology startups like ALung since 1999. Those companies have attracted about \$1.5 billion in follow-up capital.

Don Charlton, founder and CEO of The Resumator, knows the power of seed money. Innovation Works has invested \$175,000 in his company, which develops recruiting software for small businesses. The Resumator has since attracted millions more in investment dollars from across the country.

“Innovation Works and foundations are helping us bring capital into the state to create jobs,” Charlton says. “Two years ago, we were two full-time employees. Now, we’re over 30.”

One of those new hires is Jonathan Carson, a Pitt computer science graduate who developed and sold his own Innovation Works-backed company before joining The Resumator. Carson grew up in Pittsburgh and is in no rush to leave; he recently turned down job offers in California.

“I really like the company—it’s agile,” Carson says. “Pittsburgh also has a ton of cultural amenities. You get art shows, bands and lots of outdoor stuff. It’s super-cheap to live here, and people are pretty rad.”

TRANSFORMATIVE ARTS, ONE BLOCK AT A TIME

Pittsburgh’s cultural amenities also have helped lure workers and revitalize neighborhoods. One major attraction is the Cultural District, a 14-block arts and entertainment hub located Downtown. Today, Pittsburghers flock to the district’s theaters, art galleries, restaurants, retail shops and public parks. Thirty years ago, entertainment options weren’t so enriching.

Take the corner of Penn Avenue and Seventh Street, which now features bronze magnolia trees hand-sculpted by award-winning artist Tony Tasset.

“That used to be the home of Doc Johnson’s Love Potions and Marital Aids,” says Janet Sarbaugh, senior director for The Heinz Endowments’ Arts & Culture Program. “When you see people interacting

with Tony Tasset’s beautiful magnolia trees today, it’s hard to remember that this site once housed an adult bookstore. It is truly exciting to have watched the transformation of the district over the last 30 years.”

The catalysts for converting the once-seedy area into a cultural mecca were H.J. “Jack” Heinz II, heir to the H.J. Heinz Co., and his son Sen. John Heinz III. Jack Heinz purchased and renovated the former Loew’s Penn Theatre, a thriving movie palace in the 1920s that was shuttered and set for demolition by the 1960s. It reopened in 1971 as Heinz Hall, the new home of the Pittsburgh Symphony Orchestra. Over time, the Heinz family and Pittsburgh’s foundation community helped to create a world-renowned theater district.

“Heinz Hall’s beauty and success made it seem like an island in a surrounding Downtown landscape of deterioration,” Sarbaugh says. “From the seeds of Heinz Hall, Jack Heinz’s vision for Downtown expanded to become the concept of a diverse Downtown cultural district.”

That vision led to the creation in 1984 of the Pittsburgh Cultural Trust, a nonprofit dedicated to increasing Downtown’s artistic offerings. Local

foundations have since invested more than \$200 million into the Trust, including in excess of \$100 million from the Endowments. An area once populated with porn shops now attracts two million people annually and generates more than \$300 million for the region.

“The beauty of our Cultural District is the diversity of its programming and its increasing 24/7 feel,” Sarbaugh says. “There are, of course, our outstanding symphony, opera, ballet and musical theater companies, and one of the nation’s most successful Broadway series. But smaller companies, such as Bricolage and the Pittsburgh Playwrights Theatre, also have an important presence. There is a range of gallery spaces and public art. The growth of new restaurants and residential developments has been tremendous. The Cultural District has truly become one of Pittsburgh’s most distinguishing features.”

The region’s arts and culture scene appeals to young visionaries, says Heinz Endowments President Grant Oliphant.

“The creative class of workers—people who have lots of skills and craftsmanship—are attracted by other creative people,” Oliphant

**THE ARTS IN PITTSBURGH:
AN AREA ONCE POPULATED WITH PORN SHOPS NOW ANNUALLY ATTRACTS TWO MILLION
PEOPLE AND GENERATES MORE THAN \$300 MILLION FOR THE REGION.**

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says. “Foundations made a sizable investment in the creative sphere, which includes the Cultural District, but also in arts organizations and individual artists.”

Another creative sphere has emerged on a formerly blighted 10-block stretch of Penn Avenue that includes the city neighborhoods of Friendship, Garfield and Bloomfield, areas hard hit by the loss of jobs at mills and foundries. The Penn Avenue Arts Initiative, or PAAI, is a joint effort by the Bloomfield-Garfield Corporation and the Friendship Development Associates. It was launched in 1998 to turn abandoned buildings into homes and studios for local artists.

With support from a McCune Foundation grant and the Urban Redevelopment Authority, the PAAI began purchasing vacant property and selling or renting it at low prices to artists, who were given micro-grants to rehab the buildings and fund their work. The Endowments and other foundations also provided funding for various similar projects. Within a decade, vacancy rates along the Penn Avenue corridor declined from 78 percent to 21 percent.

“Cutting-edge philanthropic folks from the Endowments and others embraced the concept that artists’ innovations could be used to revitalize neighborhoods,” says Matt Galluzzo, arts district manager for the PAAI from 2006 to 2010 and current executive director of the Lawrenceville Corporation.

Shuttered hardware stores, bakeries and grocery stores now house art galleries, theaters and restaurants. Since the PAAI was founded, Penn Avenue has attracted more than \$56 million in investments.

“People want to experience something authentic and real,” Galluzzo says. “You go into these places—the [Pittsburgh] Glass Center, Most Wanted Fine Art, the Irma Freeman Center [for Imagination]—and feel a connection to place. You don’t get that in a suburban strip mall.”

Jason Sauer, an Army veteran originally from the outskirts of Pittsburgh, moved back to pursue his dreams on Penn Avenue.

“The neighborhood was a perfect fit,” says Sauer, who learned about the PAAI from a cousin in Bloomfield. “I was trying to start an arts gallery and studio in Seattle and Texas, but I couldn’t do it with the amount of money I was making.”

Sauer and his wife, Nina Gibbs, purchased a vacant building from the PAAI and launched Most Wanted Fine Art, a performance and studio space that hosts music, poetry and community events. The couple lives one floor above the gallery with their son, Rowdy. Sauer and Gibbs also host art shows as part of Unblurred, a gallery crawl on Penn Avenue held on the first Friday of each month.

Most Wanted Fine Art isn’t hard to spot—just look for a demolition derby car out front, which Sauer decorates, displays and then drives in a Mercer County fair each year. Twisted metal from the derby becomes material for his next project.

“My work fits right in with the Steel City’s past,” says Sauer, who also volunteers as a Goodwill mentor, helping young men just out of prison learn contracting skills.

“Artists have a community sensibility,” he says. “There’s a sense of identity, a sense of place. I moved to Pittsburgh on New Year’s Eve, and people were outside banging pots and pans in the street. I was instantly hooked.”

GREENER BUT NOT CLEAN ENOUGH

It’s much easier to get hooked on Pittsburgh now that its days don’t resemble nights. Sooty plumes from steel mill smokestacks no longer define the city’s landscape. But the pollution that is harder to see—namely fine particulate matter, ground-level ozone and air toxics—remains a major problem.

Industrial plants, including the continent’s largest coke works, are still scattered across the city and region, though not as many as when steel manufacturing was flourishing. Neighborhoods in the immediate vicinity can be most affected by

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THE CLEAN ECONOMY IN PITTSBURGH: THE PITTSBURGH REGION'S CLEAN ECONOMY RANKS 24TH IN THE NATION.

the pollution generated, but harmful, microscopic particles and toxic gases also are transported into communities miles away.

Pittsburgh has cleaned up its act to an extent. But it has work to do to help residents breathe easier and to attract the innovative businesses and highly skilled employees needed for continued economic growth and for whom good air quality is a priority. The city ranks in the dirtiest 10 percent of 338 urban areas for average annual particle pollution based on data from 2010–2012, according to a recent analysis by Clean Air Task Force. Particle pollution poses a significant health threat to Pittsburgh residents, contributing to heart attacks, stroke, lung disease, asthma, adverse birth outcomes—and premature death.

Moreover, cancer risk from air toxics in Allegheny County ranks in the top 2 percent in the U.S., according to a 2013 report from the University of Pittsburgh Graduate School of Public Health's Center for Healthy Environments and Communities. Air toxics are a class of pollutants known or suspected to cause cancer, as well as reproductive effects or birth defects. In addition, the region fails to meet current federal ozone and sulfur dioxide standards.

And air quality in the Pittsburgh region isn't improving as quickly as in other areas across the country. Out of 519 counties with valid monitoring data, Allegheny County was one of just 53 that failed to meet the 2012 annual fine particle health standard at the time it was enacted. More than half of the 519 counties had already met or improved beyond that standard a full decade earlier.

Foundations have played a key role in engaging stakeholders on air quality issues. The Breathe Project, launched by the Endowments in the fall of 2011, brings together businesses, organizations, government agencies and foundations to take measurable steps to reduce harmful emissions for healthier communities and a stronger economy.

Earlier work to improve the region's air quality included initiatives to decrease the energy consumption of local building stock. Green Building Alliance, the nation's first nonprofit dedicated to greening a region's commercial building sector, has played an important role in efforts to move Pittsburgh beyond its smoky past. Founded in 1993 with funding from the Endowments, GBA is a 1,200-plus member organization that helped write the book on eco-friendly building—literally. GBA collaborated with the U.S. Green Building Council to create the Leadership in Energy and Environmental Design, or LEED certification system. LEED is now a nationally recognized benchmark of a building's energy efficiency and environmental sustainability. Pittsburgh is a leader in high-performing, environmentally friendly structures.

"The Heinz Endowments and other foundations endorsed the standards and made it a requirement for projects to build to LEED certification," says GBA CEO Mike Schiller. "That helped jump-start the acceptance of LEED as a viable standard."

In turn, the standards have helped to boost the region's economy.

"As energy efficiency becomes ever more important, there's a huge opportunity for new jobs," Schiller says. "You end up hiring energy auditors, buying new boilers, putting in new duct work, a new roof. All of this is generating new jobs, and it's generating local jobs because you're not bringing someone from overseas to put a new roof on your building in Downtown Pittsburgh."

Pittsburgh has nearly 22,000 "clean jobs," according to a 2010 study by the Brookings Institution. The Pittsburgh metropolitan area ranks

\$40,000

EDUCATION IN PITTSBURGH:

THE PITTSBURGH PROMISE OFFERS A MAXIMUM SCHOLARSHIP OF \$40,000.

24th among the 100 largest metro areas in the overall size of its clean economy, which includes agricultural and natural resources conservation, education and compliance, energy and resource efficiency, greenhouse gas reduction, recycling, environmental management and renewable energy.

Younger, environmentally conscious Pittsburghers also have more opportunity to enjoy nature in their off-hours than they could 30 years ago. Riverlife, an organization the Endowments helped launch, is a public-private nonprofit that has been instrumental in protecting and revitalizing the city's riverfronts. For more than a decade, it has promoted sustainable development along the shorelines that includes green space, trails and ecologically minded landscaping, while raising awareness about proposed commercial projects that could harm the rivers or limit public access. At the same time, Venture Outdoors, an Endowments-supported nonprofit that Schiller co-founded, has created activities that make it easy for people to hike, bike and kayak in the city and beyond, offering more than 500 public programs a year.

The city's outdoor amenities improve the quality of life and help retain and attract young professionals, says Allen Dieterich-Ward, an associate professor of history at Shippensburg University who studies how politics, economics and the environment shape Pittsburgh's development.

"Pittsburgh has pieced together funding, sites and government partnerships in a way that many other places haven't been able to do, envisioning the riverfronts as a component in creating a city that appeals to both residents and out-of-town people," Dieterich-Ward says. "That's a success story for Pittsburgh."

Yet, he points out that more broad-based coalitions such as the Breathe Project are needed to help keep Pittsburgh from becoming complacent in cleaning up its environment.

"There's this interesting dynamic where sometimes the story of Pittsburgh's environmental transformation gets used as a tool to prevent further progress," Dieterich-Ward says. "If the story is, 'Look how much cleaner Pittsburgh is than it used to be,' then people declare, 'Mission accomplished.' We need to make sure we're living up to our own story."

COLLEGE AND CAREER OPPORTUNITIES

The next generation of Pittsburgh environmental leaders, technology professionals and artist-entrepreneurs, will need advanced education and training to achieve that goal. University of Pittsburgh Medical Center, the Endowments, other local foundations and corporations collaborated to establish The Pittsburgh Promise in 2008. The initiative originally provided up to a \$20,000 scholarship to Pittsburgh Public Schools students who maintain a 2.5 grade-point average, attend class 90 percent of the time and enroll in an accredited post-secondary institution in Pennsylvania. In 2012, the scholarship amount doubled to the current maximum of \$40,000.

That scholarship money helps students combat rising tuition costs and expand their college options, says Nick Beckas, a 2008 Pittsburgh Langley graduate who attended Duquesne University to study occupational therapy.

"Many high school students—myself included at one time—are forced to limit their sights on college simply due to economic hardship," Beckas says. "The Pittsburgh Promise gives students the confidence to select a college, not because it's inexpensive, but because it's where they want to go."

Beckas is now a physical therapist for UPMC, which has committed \$100 million to The Pittsburgh Promise. He's part of what the U.S. Bureau of Labor Statistics calls the education and health services "super sector," which employs the largest share—about 21 percent—of Pittsburgh's workers. Education and health services jobs and those in professional and business services (Pittsburgh's third-largest super sector, employing 15 percent of the workforce) pay an average hourly wage above the national average for private jobs, according to the bureau.

The Pittsburgh Promise, coupled with a promising job outlook after college, makes the city an enticing location in which to settle down.

"I know many families already who have either talked about moving to the city or changed their mind about leaving the city simply because they want their children to receive The Pittsburgh Promise," Beckas says.

Future Promise scholars could join Morley's staff at ALung, which employs six Pitt bio-engineering graduates—for now.

"As we expand, we'll need engineers, manufacturers, administrators, quality and regulatory affairs—pretty much across the board," Morley says. "We've found that local graduates have the skills that fit our needs well."

KEEPING THE PROMISE FOR ALL

Moving forward, the region still faces myriad challenges in ensuring that all young people contribute to its 21st-century economy.

Pittsburgh had the third-highest poverty rate in 2011—31 percent—for working-age African Americans in the largest metropolitan areas in the country, according to the U.S. Census Bureau. The Pittsburgh Public Schools' 2013 State of the District report found that only 26 percent of the district's African American high school seniors were "Promise ready," based on GPA and attendance

during the 2011–12 school year. Among white students, 68 percent met the requirements.

The city district has to address that achievement gap, while grappling with reductions in state funding and other financial challenges.

Local foundations and other civic and government leaders will need to return to the lab to help make Pittsburgh's eds, meds and arts economy more inclusive.

"Access to robust curricula, engaging instruction and role models who affirm student potential and help them navigate pathways to higher education and future careers must be elements of the learning experience for our underserved and overlooked students," says Endowments Education Program Director Stanley Thompson. "These efforts, with intelligent policymaking and funding of education, will create a culture of high expectations and acceptable outcomes. This is equity in action."

Oliphant adds that foundations can do more to build on the region's successes.

"When I moved here in 1991, people spoke about Pittsburgh in the past tense," he recalls. "Now, there's a lot of energy about what Pittsburgh could be. One of the greatest opportunities for philanthropy is to invest in that sense of possibility."

The Resumator's Charlton is paying it forward as a mentor for Entrepreneurship Youth, which helps disadvantaged children see the possibilities by creating their own companies. The program is among the many in-school and out-of-school-time initiatives that the Endowments and other philanthropies support to prepare students for college and careers.

"Each community is starting to find its youthful soul," Charlton says. "I'm from the housing projects of southwestern Pennsylvania, but I was exposed to what it takes to start a business. If you're able to make a little noise in Pittsburgh, you'll have an entire city behind you, pushing you to be successful." *h*