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PHOTOS BY CARL KOSOLA / PHOTOJOURNALIST
Danny Cabrera, one of the founders of BioBots, holds an ear that his company printed at its offices in Philadelphia.

A 3-D future

Three-dimensional printing has taken off in recent years, thanks to advances in machinery and the material used to print. The technology allows American manufacturers to compete on a global scale, and creates big advancements in health care.

By CRISSA SHOEMAKER DEBREE
STAFF WRITER

In a converted office space in Perkasie, machines are creating complex human organs out of plastic to help doctors better plan for surgery.

An hour away in Philadelphia, a dozen cubes in various states of assembly cover a folding table, destined one day for researchers who are trying to grow human organs from nothing but a string of living cells.

Traditional printing has always involved length and width, but the addition of the third dimension — depth — has been a game-changer. Once thought of only in the realm of science fiction, today's three-dimensional printing technology is allowing advances in everything from health care to conventional manufacturing.

Video online

"I honestly don't have the imagination to think about what you can do with this," said Jim Williams, a member of America Makes, a public-private partnership tasked with advancing three-dimensional printing in the U.S. "But there are people out there living their lives thinking about the impossible."

While the technology has been around for decades, 3-D printing has taken off in recent years, thanks to advances in machinery and the material being used to print. GE, for instance, is now using 3-D printing to create jet engines and parts. NASA is exploring ways to 3-D print food in space. A 2,000-square-foot office building constructed entirely by 3-D-printed parts just opened in Dubai.

And that's not all.

Scientists have implanted 3-D-printed ovaries in mice, which restored fertility in at least one rodent. They're working on ways to print human liver tissue for transplantation. And they're using three-dimensional printing to make customized prosthetic limbs for amputees.

Art Klotz, a design engineer at Creative Mechanisms Inc. in Warminster, holds an example of work that was printed using three-dimensional printing technology.

"There's no doubt in my mind that this technology is going to change everybody's life," said Danny Cabrera, co-founder of BioBots, a Philadelphia company making 3-D printers that can print with biological material. "When we started the company, the vision and the goal was to build tools that could empower people to design and engineer living things. That goes way beyond fabricating 3-D living tissue. It goes beyond even fabricating organs. This goes to being able to engineer new organisms that can help us revert climate change, or help us live on other planets."

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Legionnaires' infects four residents at nursing home

One of the four residents of The Brunswick at Attleboro in Middletown has died.

By JENNY WAGNER
STAFF WRITER

Four residents of a Middletown personal care home have tested positive for Legionnaires' disease, including one woman who died, state officials said Friday.

Rachel Kostelac, deputy press secretary for the Pennsylvania Department of Human Services, said Attleboro Community submitted an incident report about the three patients to the Bureau of Human Services Licensing on Tuesday.

Between May 28 and 30, 11 people from the facility were sent to the hospital and six were admitted with pneumonia, Kostelac said. The woman who died Tuesday was one of the patients with pneumonia, Kostelac said. Attleboro confirmed Saturday that another person was diagnosed with the disease.

Mary Kender, executive director of the retirement community, told this news organization that four residents of The Brunswick at Attleboro, a part of the Attleboro Community, tested positive for Legionella bacteria, but she had not seen anything that said they had developed Legionnaires'.

Legionella bacteria live in freshwater and can grow in large water systems, fountains and hot tubs that aren't kept clean and air conditioning units for buildings, among other places, according to the U.S. Centers for Disease Control and Prevention. If water contaminated with Legionella then gets into the air, people can breathe it in.

Some people are at risk of Legionnaires', a serious type of pneumonia, and while most are able to be treated with antibiotics, about 1 in 10 will die from complications, according to the CDC.

A statement from Kender on Friday afternoon said that The Brunswick has been working with the Bucks County Department of Health to determine the cause of the Legionella bacteria infection.

The Brunswick at Attleboro is investigating facility and non-facility sources and has tested its water and cooling system, Kender said. The health

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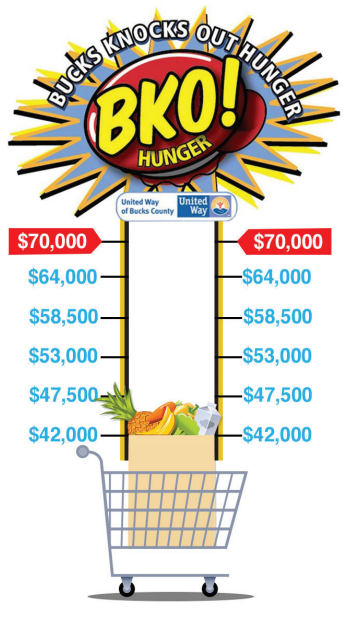

Bucks Knocks Out Hunger has raised $42,170 to date toward a goal of $70,000 to feed food-insecure people in Bucks County.

Donations are being accepted online at www.uwbucks.org/bko-hunger and through canisters in offices throughout the county (a list of locations is available at the website). Contributions also may be made at branches of Penn Community Bank, and by mail at the United Way, 413 Hood Blvd., Fairless Hills, PA 19030.

COURIER TIMES

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Ali was bigger than boxing

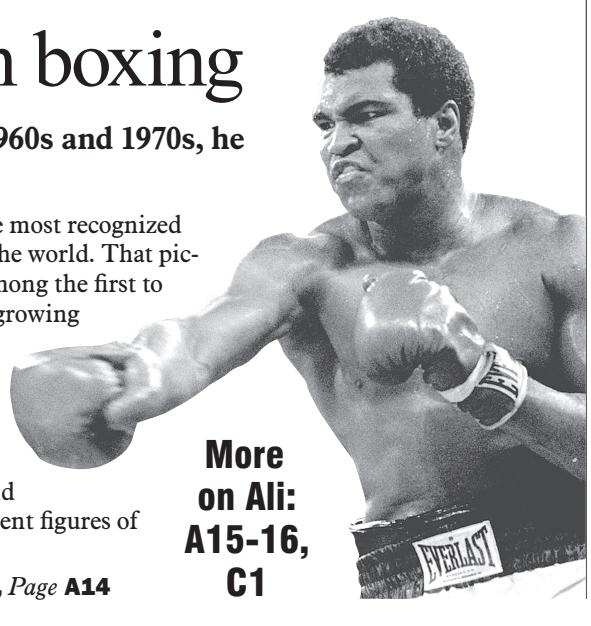
For a generation that came of age in the 1960s and 1970s, he was far more than a guy who could fight.

By DAVID BAUDER and HILLEL ITALIE
ASSOCIATED PRESS

NEW YORK — During the Beatles' first visit to the United States in 1964, clever publicity agents arranged a meeting with Cassius Clay, then training for the bout that would make him heavyweight champion. The result was a memorable photo of a whooping Ali standing astride four "knockout victims."

Two emerging cultural forces who were beginning their path to global fame.

But as popular as the Beatles became, it was Muhammad Ali who went on to become the most recognized person in the world. That picture was among the first to show him growing into that persona alongside the major cultural, political and entertainment figures of the era.



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