

Inspired Life

Middle-schooler finds goose poop that has cancer-fighting compound

“My mom, auntie and grandma have all had cancer, so it makes me happy that something I found could help,” said Camarria Williams.

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Camarria Williams at the James R. Jordan Boys & Girls Club in Chicago. (Boys & Girls Clubs of Chicago)



By [Sydney Page](#)

When Camarria Williams, 13, stumbled upon goose poop in a neighborhood park, she enthusiastically scooped some up. She and six other students were looking for bacteria samples.

“My mom feeds animals, and I know birds eat everything and anything,” said Camarria, an eighth-grade student at William H. Brown STEM Magnet School in Chicago. “I knew there must be in bacteria in it.”

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After collecting their samples, students in the [Chicago Antibiotic Discovery Lab](#), a STEM outreach program, were taught how to isolate bacteria and program a robot to catalogue it and track antimicrobial activity. Camarria learned, with university researchers’ help, that her goose poop contained a cancer-fighting compound. She was

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stunned and delighted.


“I like discovering new things,” she said.



Camarria collects samples at Garfield Park Lagoon. (Murphy Lab at University of Illinois at Chicago)

The program — run by Brian Murphy, a professor at the University of Illinois at Chicago — partners with the [Boys & Girls Clubs of Chicago](#). Its goal is to give underserved middle and high school students experiences in biomedical sciences.

“The premise of our 14-week program is to teach students how many medicines — in this case, antibiotics — are discovered,” said Murphy. “The students analyze their own data and then make decisions in the very initial stages of this drug discovery process.”

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“We’re trying to connect these experiences to careers in STEM,” he added. “I thought if we actually involve students in our own research that we do in the lab, we could show them there’s a pathway to careers in the biomedical sciences, and maybe even start a pipeline from middle school to high schools to their local universities.”

For Camarria, signing up for the program was a no-brainer.

“I’ve always liked science and found it interesting, like how you can mix chemicals to make something.” she said.

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you can find someone to make something, she said.

She did not anticipate, however, that her involvement in the program would result in her and university researchers' uncovering a novel compound with cancer-fighting capabilities.

"I did something, and it worked," Camarria said. "It feels good."

Camarria collected the goose droppings at Garfield Park Lagoon, while other students collected samples such as lake water, leaves, bugs, dirt and flowers.

"It was a lot of fun to be able to go out, put on the gloves and do the science myself," said Camarria.



Diandra Taylor, left, Jin Yi Tan and Camarria at the Murphy Lab at the University of Illinois at Chicago. (Murphy Lab at University of Illinois at Chicago)

While Camarria's sample did contain a bacterium with antibiotic activity, that wasn't the key takeaway of her discovery. The goose poop contained a novel compound, which university researchers investigated and found had cancer-fighting properties, specifically for ovarian and skin cancer.

"We tested the compound against a panel of pathogens and a few cancer cell lines," said Jin Yi "Jeanie" Tan, a graduate student in Murphy's lab who helps run the outreach program. "Although this compound did not exhibit significant antibiotic activity, it did show cytotoxic activity in ovarian and melanoma cancer cell lines."

Camarria was thrilled to learn her sample was even more promising than she originally thought

promising than she originally thought.

“My mom, auntie and grandma have all had cancer, so it makes me happy that something I found could help,” she said. “It makes me want to discover more things out there.”

The findings were published in the American Chemical Society’s Omega Journal in October, and Camarria is named as a co-author.

“Now people will know me,” she said. “They’ll know that I am a smart kid and I’m curious.”

Camarria’s discovery “captures the whole essence of the program and what we set out to do, to give our youth an opportunity to really get experience with science and show them that their commitment and willingness to participate can lead to something,” said Jonathon Rodriguez, a technology program manager at the Boys & Girls Club.

Although the finding is exciting, Murphy said, it’s unlikely that it will become a drug.

“Very, very few natural compounds that are discovered ever make it into the clinic as drugs,” he said.

Still, “compounds like this allow us to understand how cancer works a little better, and that allows other groups of scientists to develop better drugs,” Murphy explained, adding that he and other researchers may continue studying Camarria’s novel compound.

Murphy said the finding highlights the importance of accessible STEM programs for young people.





University of Illinois at Chicago outreach mentors from left, Professor Brian Murphy, Taylor, Tan, Ian McIntire and Lisa Rusali, with students from the James R. Jordan Boys & Girls Club. (Murphy Lab at University of Illinois at Chicago)

“What we’re really trying to do is show young students that there are a lot of real-world applications of science,” he said. “We want to light a spark inside of them, get them to care about their education, and maybe even be the launching point for the next generation of biomedical researchers.”

Camarria is already looking forward to her future career.

“I want to be a scientist,” she said.

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