

# Award-winning N.D.G. teen inspired by her dying sister's passion for science

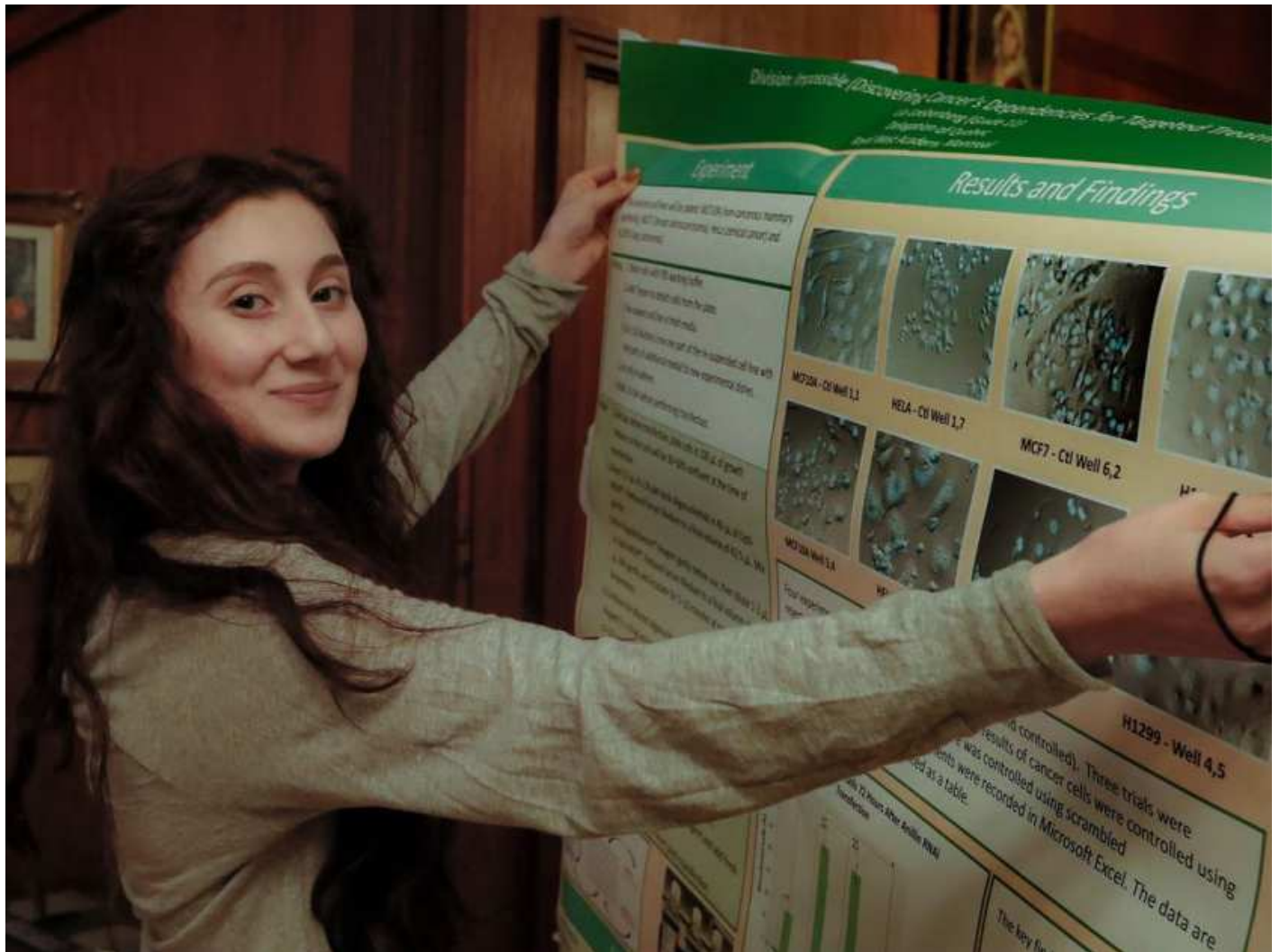


ISAAC OLSON, SPECIAL TO THE MONTREAL GAZETTE

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Royal West Academy student Lia Loebenberg, shown at home on June 16, 2017, is graduating from Royal West Academy, where a science award has been established in her sister Laura's honour. *DAVE SIDAWAY / MONTREAL GAZETTE*

Laura Loebenberg was once an ambitious Royal West Academy student, pianist and science fair gold medallist with a bright future ahead of her, but at age 14, that future was dimmed by a tragic diagnosis.

Eight years later, her battle with brain cancer appears to be nearing its end. Two months ago, she was moved from her family's house into palliative care. She has since been largely unresponsive aside from occasional communication with her eyes, and her breathing is increasingly difficult.

Laura was not able to finish high school or chase her dreams of becoming a neurosurgeon, but today her younger sister, Lia Loebenberg, is taking her final exam at Royal West Academy with a box full of science fair medals at home in Notre-Dame-de-Grâce and four prestigious university scholarships to choose from.

"Everything I do is for her," said 16-year-old Lia, sandwiched on a couch between her loving parents, Bosmat and Eric Loebenberg.

For half her life, Lia has managed to stay focused on her schoolwork despite so often coming home to an empty house — her parents were by their oldest daughter's side through all the treatments, surgeries and checkups. For Bosmat, a highly involved mother, not being there as much for her second child "was devastating."

Lia is now looking forward to her next academic step into honours health science studies at Dawson College, interested in pursuing a career in assisted reproductive technology.

Since Grade 8, Lia has won science fair gold at Royal West every year. Her projects have gone on to win medals and awards at the regional, provincial and, most recently, the national levels. With a score of 92 per cent, she won bronze at the Canada-Wide Science Fair in Regina in May.

"At first I was a little intimidated at the nationals because basically every project is the best project of their city or their region," Lia said. "Every time you move up a step, you're put in a room with brighter and brighter people."

Combined, the Loebenberg sisters, five years apart in age, have won six gold medals at their high school. In Grade 8, Laura decided to contact McGill

professor and columnist [Joe Schwarcz](#)

(<http://www.montrealgazette.com/columnists/joe-schwarcz.html>) to ask for assistance with her science project. He didn't have time to be her mentor, but seeing her drive and intelligence, he helped her get lab time and a mentoring professor at Concordia University.

Years later, Lia used that foundation laid by her sister to access the same lab to create her own award-winning projects. In that way, Bosmat Loebenberg observed, "Laura passed the torch to Lia."

Lia's first project revealed that bacteria die in greater numbers the closer they are kept to a Wi-Fi router. She named that project "[Why-Fi](#) (<http://exposciences.qc.ca/en/awards-winners/winner/record/5321/why-fi>)?" Fast-forward to 2017 and her project was focused on cancer, inspired by her sister's battle. It was titled "Division: Impossible (Discovering Cancer's Dependencies for Targeted Treatments)."

"It's already known that anillin, a protein, is being overproduced in cancer cells, but I wanted to know if this means that cancer is dependant on overproducing it," Lia said. "I induced the suppression of the gene responsible for this over-expression in order to see if cancer cells would still be able to divide afterward."

She found that 60 per cent of the cancer cells failed to divide and, in adjusting the concentrations, there is a certain threshold that leaves just enough anillin for the healthy cells. Ideally, as a targeted treatment, she said the suppression levels could be adjusted "so the healthy cells aren't affected like current treatments."

Before heading to the nationals, Eric Loebenberg told Lia "a hundred times, 'if you come back with nothing, who cares? To get there is a big deal.' "

But for Lia, it was about more than just a medal. On the [Youth Science Canada page](#) (<https://secure.youthscience.ca/virtualcwsf/projectdetails.php?id=5434&>) detailing her project, she writes, "Future competitors can take solace in the fact that the purpose of these projects is not to win or lose, it's to remind you the importance of wanting to contribute to the well-being, comfort and health of our society."

Now Lia is graduating from [Royal West](#), ([http://www.emsb.qc.ca/emsb\\_en/media\\_en/onepresrelease.asp?id=4015](http://www.emsb.qc.ca/emsb_en/media_en/onepresrelease.asp?id=4015)) where a science award has been established in her sister's honour. There was a

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time that it frustrated Laura (<https://youtu.be/UjNbXVGeuQo>) that her little sister would finish high school first, but that feeling has since changed.

Not long before she entered her unresponsive state, Laura told her mother:  
“I’m so proud of Lia.”