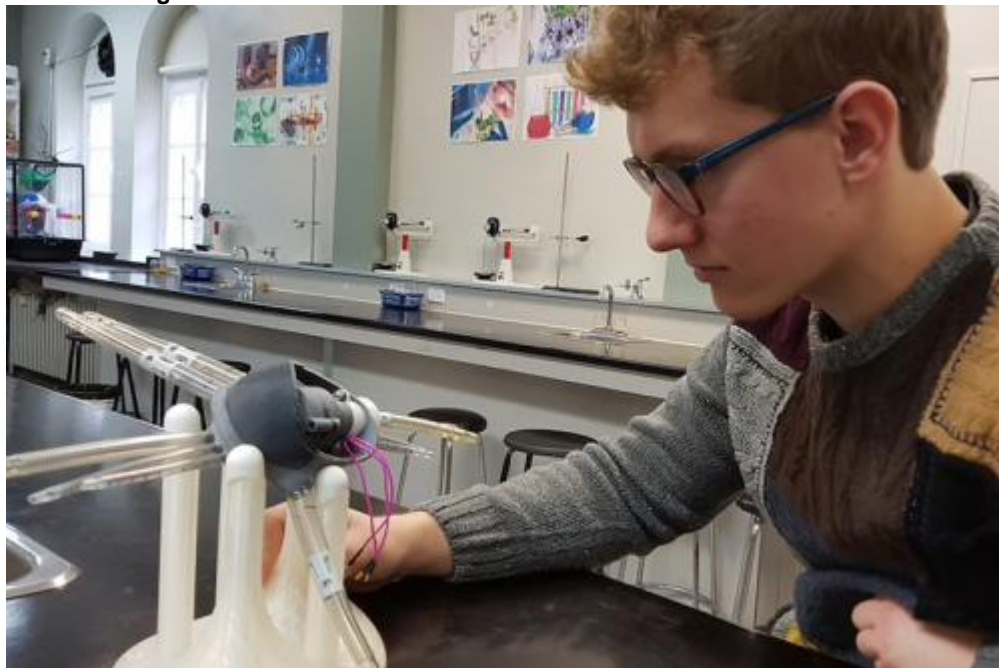


Getting to the heart of the problem leads to a gold medal

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Featured Image:



Jonathan Lévesque of Lévis, Québec won a gold medal, the senior Innovation Challenge Award, and a Youth Can Innovate Award at CWSF 2018 for QualyL, his first-of-its-kind, no replacement artificial heart. The unique invention not only functions as a heart, but also runs real-time self-diagnostic tests to detect any problems, and adjusts beats-per-minute based on the patient's situation (such as physical activity or altitude changes), all while being roughly 250 times cheaper than current artificial hearts.

The flexible membrane that reproduces the movement of the heartbeat is made with biocompatible materials, sensors and a centrifugal motor, which allow it to pump using less energy. It also reacts to oxygen demand, whether the person is at rest or doing an activity, something not currently possible with current artificial hearts. Additionally, sensors adjust for altitude, as the heart is required to pump more at high altitude to oxygenate the body.

Lévesque hopes that his improvement on the artificial heart will provide an effective, cost efficient and safer alternative, with the ultimate goal of saving more lives. The project started with a personal connection to the issue, as a close friend has had a heart problem. His inspiration led him to a prototype that professionals are calling "a very good step in the direction we hope to see in the future".

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