

Dazed and confused about the benefits of CBD? You're not alone.

January 9 2020, by Laura Castañón



Credit: Matthew Modoono/Northeastern University

The number of products advertised as containing CBD, a compound derived from cannabis plants, has skyrocketed. Consumers can purchase CBD-infused burgers, coffee, beer, and toothpaste, as well as creams and

oils marketed as treatments for pain, anxiety, and even cancer.

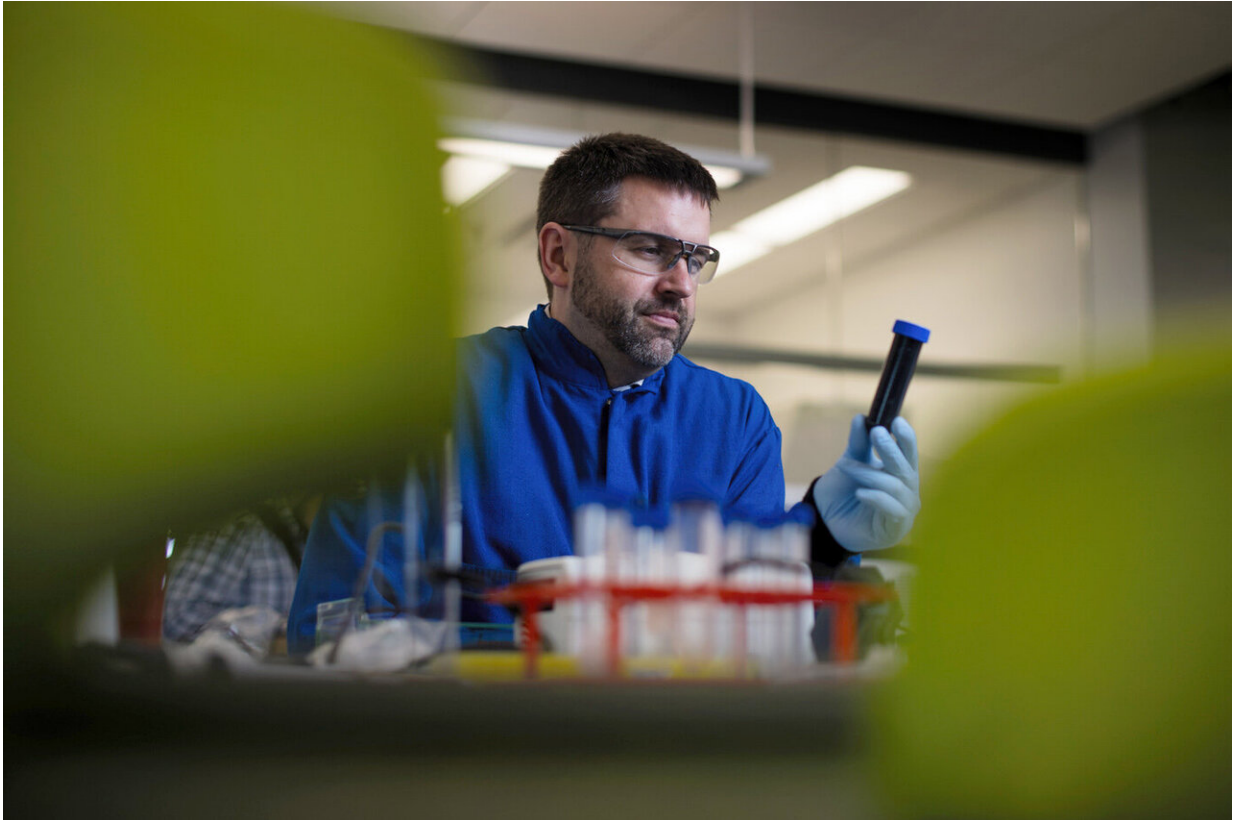
But what, if anything, do these products do? And are they safe? And do they even contain CBD? The research into these questions is scant.

Now, researchers at Northeastern University and Loyalist College in Ontario, Canada are teaming up to train graduate students in the analytical techniques required to investigate cannabis, and help them understand the regulatory landscape in both Canada and the U.S. The partnership also plans to create a robust research enterprise surrounding cannabis and other areas of biotechnology.

"There's not much research or data that says adding CBD has any clinical effect—it's all anecdotal," says Jared Auclair, an associate teaching professor of chemistry and chemical biology at Northeastern, who is leading Northeastern's side of the partnership. "This is a research opportunity for our students to apply what they learn to a scientific question that happens to focus around cannabis."

The new partnership won't focus solely on CBD. The researchers and their students will be evaluating all aspects of cannabis, including potential medical uses and the psychoactive component of recreational marijuana known as THC.

While marijuana remains an illegal substance at the federal level in the United States, 11 states and the District of Columbia allow it to be used recreationally, and 33 states have legalized it for medical use. In Canada, recreational use was legalized in 2018, and researchers at Loyalist were studying medical marijuana even earlier. That, combined with Loyalist's proximity to Northeastern's Toronto campus, makes the school an ideal partner for this project.



Jared Auclair directs Northeastern's biotechnology programs, as well as the Biopharmaceutical Analysis Training Laboratory on Northeastern's Burlington, Massachusetts campus in the U.S. Credit: Adam Glanzman/Northeastern University

"Cannabis is legal in all of Canada, and Loyalist is an active player in researching CBD, THC, and other aspects of cannabis," says Auclair, who directs Northeastern's biotechnology programs, as well as the Biopharmaceutical Analysis Training Laboratory on Northeastern's Burlington, Massachusetts campus in the U.S., which provides people from around the world with training in the manufacturing practices and regulatory considerations necessary to bring pharmaceutical products to the market.

"This is an opportunity for us to have joint classes, joint workshops, and other programs around cannabis, but also around the biotech industry in general," he said.

When the country legalized recreational marijuana, new opportunities opened up to work with the burgeoning industry. Loyalist was the first college in Canada approved to study cannabis, and launched Canada's first post-graduate certificate program in cannabis applied science in 2018.

"This has provided support for us, as an academic institution, to work with industries that are focused on the scientific basis for their product development," says Kari Kramp, who is the principal investigator for Loyalist's Applied Research Centre for Natural Products and Medical Cannabis. "To better understand the plant, and to better understand the process in which they grow the plant, the ways in which they analyze the plant, and how to generate innovative, high-quality, consistent products for the market."

Students from Loyalist have already taken a course at Northeastern's Toronto campus examining international regulations surrounding cannabis, and Auclair traveled to Loyalist's campus to speak to biotechnology students about opportunities in the field.

The new educational and training programs for graduate students at both institutions will officially begin this summer, and joint research projects will start in the fall. Auclair is also working with his Northeastern colleagues to add opportunities for undergraduates in the future.



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As the partnership grows, both Auclair and Kramp stress the importance of providing students with training and experience to set them up for success after they graduate. Northeastern has an existing [global network](#) of thousands of co-op employers and Auclair anticipates that Loyalist's network of industry partners will offer new co-op opportunities for students in Canada, specifically. Additionally, students will be able to practice valuable analytical techniques as they investigate new cannabis products, and their findings could provide key insights for consumers and regulators.

"They'll have the opportunity to put to use some of the skills that they've learned," Auclair says. "And also interact with the regulatory environment in Canada."

Currently, regulatory agencies have only a small handful of scientific studies to base their cannabis decisions on. The United States Federal Drug Administration has approved only one CBD-based drug, which helps treat patients with rare, severe forms of epilepsy, and recently issued a statement that other CBD products may not be safe and certainly aren't legal. But the World Health Organization released a report in 2018 that said CBD generally seemed safe and wasn't associated with any public health problems.

Meanwhile, the U.S. Congress passed a bill in 2018 reclassifying hemp, a strain of the cannabis plant which contains high levels of CBD and

very low levels of THC, as an ordinary agricultural crop instead of a controlled substance. As a result, the production of hemp has more than quadrupled, the CBD industry has exploded, and regulatory agencies are scrambling to keep up.

In addition to serving the students of both schools, this partnership will provide an avenue to tackle some of the unanswered questions around cannabis and provide concrete evidence for future regulations.

"For these policymakers, for governments, for regulators, to make informed decisions, more research needs to be done," Kramp says. "I think that's the bottom line—more information is a good thing."

Provided by Northeastern University

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