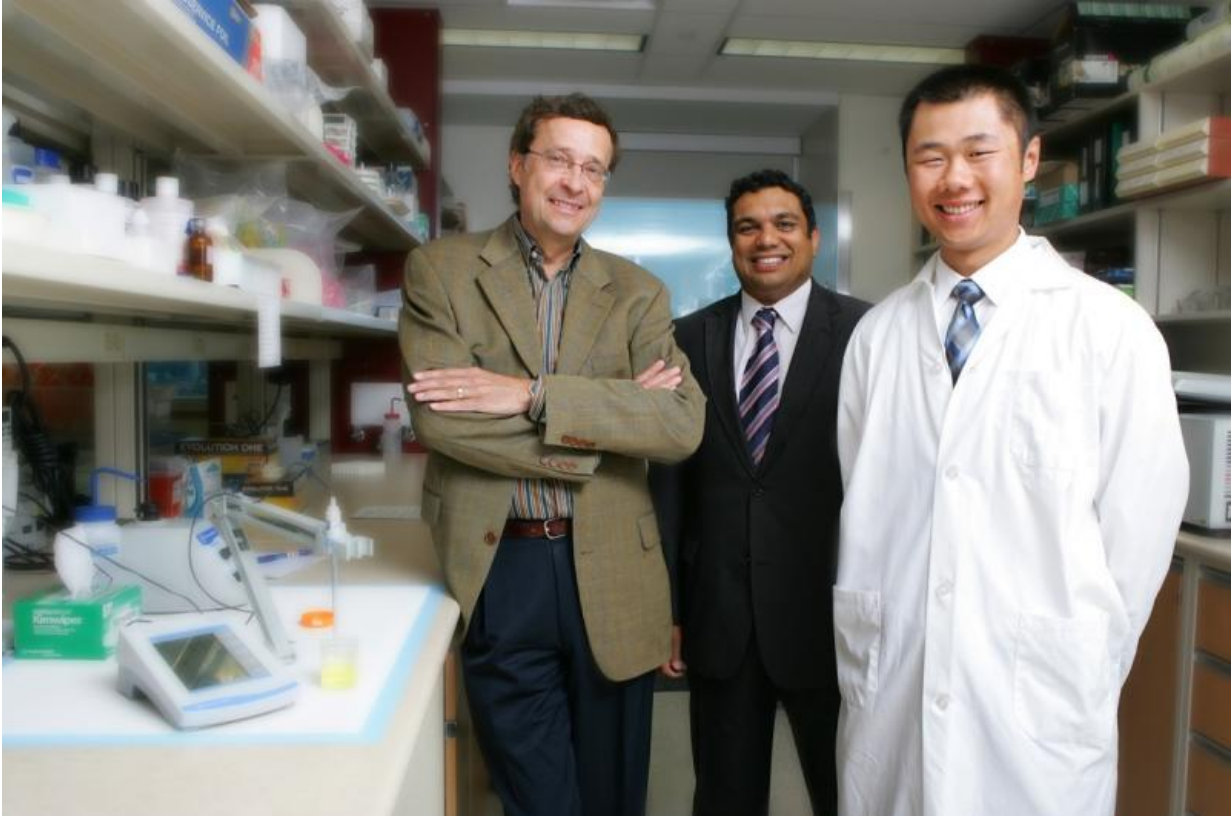


# Using metabolomics to prevent colon cancer

July 25 2016, by Ross Neitz

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The founders of UAlberta spin-off company MTI Technologies Inc. have signed a multi-million dollar licensing agreement for a diagnostic test that detects pre-cancerous polyps in the colon. Credit: University of Alberta

When Haili Wang first began work on her Master's degree eight years ago at the University of Alberta, she had little idea where it would take her. Today the discovery science she pursued in 2008 has opened the

door to an innovative product, a successful company and a multi-million dollar business deal that could improve the lives of thousands of patients.

"When we started we never really thought it would get to where it is," says Wang, now an assistant professor of surgery at the U of A. "The exciting part for me is that our work is ultimately coming to real use in the world. It's not just an experiment anymore."

The 'experiment' was to see if metabolomics could be used in patients to find colonic polyps—a precursor to [colorectal cancer](#). Metabolomics—a science in which the University of Alberta is a world leader—is the study of small molecules, commonly known as metabolites, within cells, biofluids and tissues. Working in the lab of Richard Fedorak, professor of gastroenterology, the two quickly discovered it was not only possible to find colonic polyps, but that they could potentially give physicians a new tool in the prevention of colorectal cancer.

In a clinical trial of nearly 1,000 patients from 2008 to 2010, Wang and Fedorak demonstrated that a urine-based diagnostic [test](#) for the early detection of polyps test exhibited significantly higher sensitivity than current fecal-based screening tests. It was non-invasive, easy to collect and—most importantly—accurate. Soon after they co-founded [Metabolomic Technologies Inc. \(MTI\)](#) and began to work on fine-tuning the test in order to bring it to market.

In May of 2016 the work finally paid off. With the help of TEC Edmonton, a not-for-profit organization that helps technology entrepreneurs accelerate their growth, MTI announced a three-year, multi-million dollar licensing and distribution agreement for the test—named PolypDx—with Atlantic Diagnostic Laboratories. The agreement provides an entry point for the product into the eastern U.S. market.

"PolypDx is a lab-based test. You go to your doctor, they give you a lab sheet to check off for a blood test and a urine test, you go get it done and the results come back—either you have polyps or you don't," says Richard Fedorak, now dean of the U of A's Faculty of Medicine & Dentistry. "Once screened, patients with polyps can be directed to a colonoscopy, during which the polyps can be completely and safely removed, preventing the progression to colorectal cancer."

"We've been fortunate to see MTI grow since its early days when TEC Edmonton helped it become one of the U of A's most promising spin-off companies," said Chris Lumb, TEC Edmonton CEO. "MTI has always been a tremendous success story of U of A commercialization, and we're excited to see its technology being leveraged across the border. Many patients and health care professionals will benefit greatly from this new agreement."

Colorectal cancer is a leading cause of death in North America with over 157,000 new cases reported in 2015 alone. Every year approximately 1,600 Albertans are diagnosed with colon cancer and another 600 die from it. The hope is that PolypDx will significantly reduce those statistics by detecting polyps before they become cancerous. MTI is now also examining if it can develop similar tests for the early detection of prostate and breast cancer.

"This is the start of precision medicine, where you can use a simple diagnostic test to tell you what your problem is," says Fedorak.

While the licensing and distribution agreement is one commercial success, Fedorak's goal as the dean of the Faculty of Medicine & Dentistry is to champion many more of the Faculty's original health research into spin-off companies, that will provide both health and commercial value for the people of Alberta.

"It's part of the bigger University of Alberta mission to change from a resource economy to a health economy, something our scientists in the Faculty of Medicine & Dentistry can drive."

Haili Wang says in hindsight, it wasn't difficult to identify her research as an opportunity waiting to happen. "It was a human project, it was tangible, it was clinical, it was relevant. So it was a great opportunity."

Provided by University of Alberta

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