



Canary System Inventors Nominated for Innovation Award

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Stephen Abrams, DDS, and Andreas Mandelis, PhD, have been nominated for the 2018 [Manning Innovation Award](#) in recognition of their work in creating the [Canary System](#), which finds small cavities and cracks in teeth before they are large enough to be seen on x-rays.

The Canary System also can be used to find decay under old fillings, sealants, braces, and crowns and examine the interiors or root canals. Clinical trials have verified that it is more accurate than x-rays for detecting decay between teeth, its inventors report.

“It has been a long journey from the first discussion on how we could create a device that could accurately detect tooth decay without exposing patients to x-rays,” said Abrams.

“The Canary System integrates technology developed by Dr. Mandelis into a clinical system that can diagnose, measure, and record tooth decay at the earliest stages. The Canary System has a camera, so patients can see the tooth surface, and a voice that reports on the findings of each examination,” Abrams said.

“Canary examination results are easy to understand, unlike the small black patches on x-ray images, giving patients the confidence to accept treatment recommendations and the motivation to adhere to home management routines,” said Abrams.

“The core technology, PTR-LUM, involves shining a low-powered laser on a tooth and then measuring the heat and glow from the tooth. During a 5-second scan, over 520,000 measurements are taken, and the Canary Number is calculated from these measurements,” said Dr. Koneswaran Sivagurunathan, who oversees research and product development for the Canary System.

“I am so pleased that our core technology is being used to improve oral health,” said Mandelis, professor at the Department of Mechanical and Industrial Engineering at the University of Toronto. “This is the Canadian solution to a very common oral disease and will improve the oral health of patients worldwide.”

Since 1982, the Ernest C. Manning Awards Foundation has been discovering, honoring, and rewarding Canadian innovators of all ages and across all sectors.

