Study finds one in eight Calgary homes exceed Health Canada's acceptable radon level

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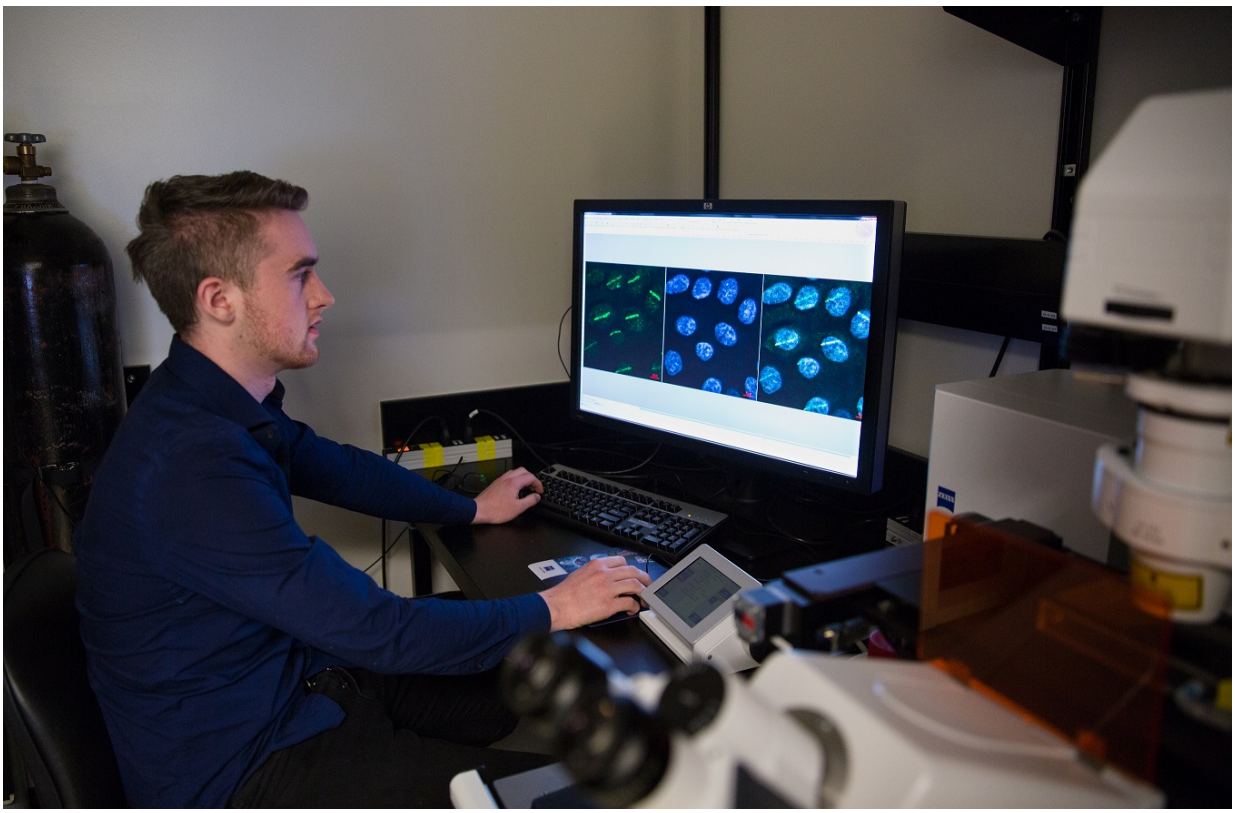


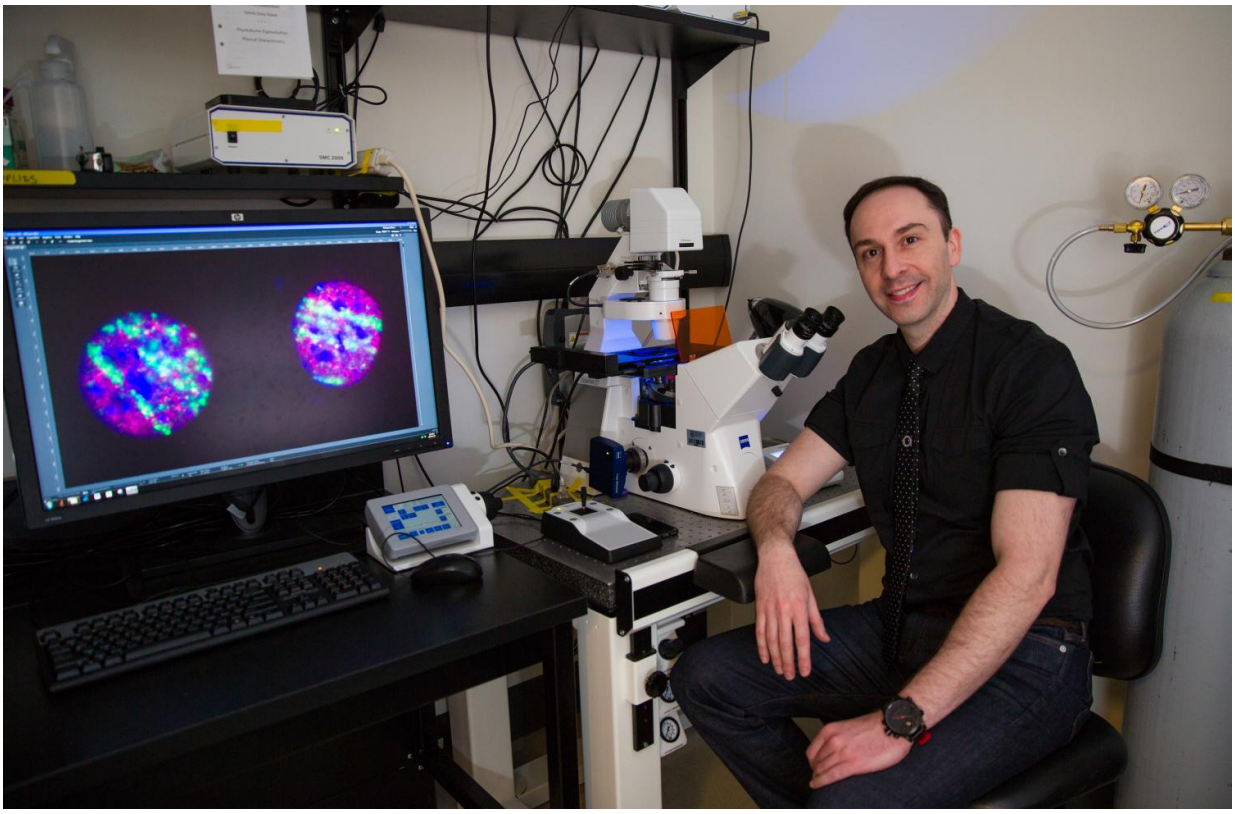
Fintan Stanley is looking at the DNA of human lung cancer cells exposed to a 'micro-irradiation laser' used to cause DNA damage and examine the effects on cell health. Credit: Riley Brandt

Radon gas is a colourless, odourless radioactive gas that has been linked to lung cancer. Now, University of Calgary, Cumming School of Medicine, researchers have proven it's prevalent throughout southern Alberta and in Calgary area homes. Undertaking one of the largest Canadian municipal studies to date, Aaron Goodarzi, PhD and his team tested radon levels in more than 2,300 Calgary and area homes. The results show that there is no unaffected neighbourhood. The study is published in today's *CMAJ Open*.

"This work demonstrates that radon is a genuine and growing public health concern in southern Alberta," says Aaron Goodarzi, PhD, an assistant professor in the Departments of Biochemistry & Molecular Biology and Oncology and a member of the Arnie Charbonneau Cancer Institute. "Radon is a known carcinogen. The good news is that the risk is easily remediated, and we've been able to prove that through the course of the study".

Homes including condominiums, duplexes, townhouses and single family dwellings were tested for 90 days. Testing for this length of time provides the most accurate readings. In homes where radon exceeded Health Canada's acceptable levels remediation was recommended. Once the remediation was complete the homes were tested a second time and in all cases, the gas level was returned to a non-hazardous level.

"The results showed radon gas levels in my home were in the hazardous range. We had remediation done and now tests confirm we are in a safe range," says Bob McAuley, a southwest Calgary homeowner and participant in the research study. "We have kids. We spend a lot of time indoors. I want it to be safe. No one in my family smokes. I've read that radon is the leading cause of lung cancer among non-smokers. Taking this risk away was well worth it."



Dr. Aaron Goodarzi with pictures of the DNA of human lung cells exposed to high linear energy transfer radiation, the same type of radiation emitted by radon. The green stripes indicate the 'swathe of genetic destruction' caused by the radiation as it passed through the DNA of cell. Credit: Riley Brandt

Radon levels greater than Health Canada's acceptable limits (of 200 Bq/m3) for the naturally occurring but cancer-causing gas was detected in all areas, with one in eight containing dangerously high radon levels between 200 and an astounding 3,441 Bq/m3. The World Health Organization estimates that the relative lifetime risk of lung cancer increases by 16 per cent for every 100 Bq/m3 of chronic radon exposure. Surprisingly, the scientists found that newer homes, built within the past 25 years, contained substantially higher radon gas levels compared to older homes.

"I would encourage everyone living in southern Alberta to consider testing their homes for radon gas, you can't see it, or smell it, you don't know you're breathing it in unless you test for it," says Fintan Stanley, a PhD student and first-author of the study.

The researchers and Health Canada recommend testing your home during the winter heating months of October to April, as that's when we spend the most time indoors, and when our homes are sealed up tight to keep the warm air in.

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