

Dr. Chris McLeod and Nicole Boeder pose with Roberta Ellis, the namesake for the new award for excellence in occupational health and safety.



# Practicum to prevent lead exposure leads to award

By Gail Johnson

When workers at her practicum raised concerns about lead exposure, UBC student Nicole Boeder devoted her summer to finding out more. Her investigation earned her the inaugural Roberta Ellis Award for Excellence in the Study and Practice of Occupational and Environmental Health, and helped some workers along the way.

While she was doing her undergraduate degree in science, Boeder wanted to be a doctor. Over time, however, she found herself more becoming curious about why people become ill in the first place. Realizing the potential impact she could have on people's lives by preventing injury and disease, she pursued the MSc in Occupational and Environmental Hygiene program at UBC.

The program allowed Boeder to take a proactive approach to health and medicine. Last summer, she was able to put her passion for prevention into practice while doing her industrial-hygiene co-op practicum at a lead and zinc smelter and refinery.

## Understanding workplace lead exposure

While working with an industrial hygienist and hygiene technicians during her practicum, Boeder learned that previous workplace testing had revealed that lead exposure was occurring for a group of workers that did not have direct contact with lead processes. What wasn't as evident was the source.

Lead is a highly toxic agent that can interfere with normal cellular biological processes throughout the entire body and cause serious chronic health problems. Inhalation has generally been considered the greatest potential route to exposure in this type of workplace.

However, what made the situation curious was that exposure was occurring in some workers, but not all, and air sample results didn't support any correlation for this particular group.

"That's what prompted me to do the investigation into determinants of lead exposure in this group of workers," says Boeder, who now works as health and safety advisor for the Vancouver Airport Authority. "Some tasks were associated with a much higher

exposure than others. I identified different tasks, and working conditions, and hygiene habits that were other potential routes of exposure.”

Boeder conducted air sampling, dermal wipes, and personal hygiene surveys in combination with biological data monitoring. She also discovered that certain worksite characteristics could result in greater potential airborne lead exposure, especially from falling dust associated with working underneath vehicles.

## Limiting exposure

She also found strong links between workers’ personal hygiene habits and lead exposure. “What kind of gloves they were wearing, how frequently they changed their gloves, and how effective were their own personal handwashing techniques: those enabled us to look at all potential routes of exposure other than what they might inhale,” she says.

This enhanced understanding of lead exposure determinants made for informed recommendations to reduce personal exposure, such as changing the type of gloves worn and replacing them more frequently. Boeder did her analysis while still on her practicum so that she could present her findings to the workers themselves.

“It opened up the discussion between workers and management about what everyone could do to make sure we keep exposures at a minimum,” Boeder says. “We got ideas from workers on how to work more safely and prevent or limit their exposure with some of these tasks.

“It was important to the workers because they had concerns, and that’s what drove this research,” she adds. “If a worker has a legitimate concern, that’s something that should be looked into and investigated. We have the right to refuse unsafe work and also the right to know and be made aware of our workplace exposure. Knowing your rights isn’t just about staying safe in the physical sense, but about thinking about your health as well.”

## Practical applications

While Boeder’s efforts helped the workers, they also impressed the committee looking for candidates for the Roberta Ellis Award for Excellence in the Study and Practice of Occupational and Environmental Health.

Dr. Chris McLeod, Partnership for Work, Health, and Safety co-director at UBC’s School of Population Health, came up with the idea for the Roberta Ellis Award as a way to recognize the former senior vice president of corporate services and human resources at WorkSafeBC, who retired last year. Ellis is known for her longstanding support of the education and training of students in the area of occupational and environmental health.

The committee, made up of occupational and environmental health faculty, assessed the UBC program’s co-op students, ultimately selecting Boeder as the recipient of the inaugural \$1,000 award.

“She did really interesting, excellent work and she was able to bring forward some concrete recommendations to help improve workers’ circumstances,” McLeod says. “Her work was a really good fit for the award because her research had strong practical applications.”

Suhail Marino, director of privacy and operations at the Partnership, says Boeder’s research demonstrated excellence in the study and practice of occupational and environmental health. “She had an impact on protecting workers and making their work environment safer, the goal of all of us in our field,” Marino says.

WorkSafeBC and the Partnership for Work, Health, and Safety supported the inaugural award, but going forward it will be supported by WorkSafeBC.

Encouraging the growth of the next generation of researchers is a key component of WorkSafeBC’s research program, says Lori Guiton, director of WorkSafeBC Policy, Regulation and Research.

“Through our Research Training Awards and through the Partnership for Work, Health, and Safety, we support young scientists at the beginning of their careers, connecting them with policy makers, employers, and other stakeholders as they are establishing their research interests and discovering their passion for improving occupational health through their work.

“Roberta’s long commitment to building capacity in occupational health and safety research underscores its importance to us as an organization, and this award honours her contribution to this integral piece of our approach: supporting the training of new researchers today who will help us to respond to the critical questions of the future.” ☺