

Eddie Ko treats Maryam Quazi for asthma distress as the respiratory students act out a scenario as part of their curriculum. Simulation is gaining momentum as a way to prepare students for the realities of the workplace.



BREATHING PRACTICE

Eddie Ko's pulse was racing and his hands were clammy. The third-year NAIT Respiratory Therapy student wasn't sick – he was relating how he felt during a simulation scenario that saw him treat an asthma patient in distress. "You've got to think on the spot, it's as real as it gets," Ko says.

To boost the confidence of Respiratory Therapy students, starting in April NAIT will add more simulation scenarios to the curriculum as part of a project called Simulation for Clinical Optimization of Respiratory Education (SCORE). Simulations can use actors or mannequins as patients, or can be computer-based.

The project will also help address the shortage of practicum spots in hospitals and other settings, like home care. "The clinical rotation will be reduced from 39 to 35 weeks, with eight weeks of simulation training incorporated into the program," says instructor Joe MacPherson.

Allan Shemanko, assistant manager of Respiratory Therapy and EEG Services at the Royal Alexandra Hospital in Edmonton, says simulation is catching on in a big way at Alberta Health Services, and he wants to see it used more to train students. "Students will definitely benefit from the better preparation that simulation can provide. Existing practitioners serving as preceptors (those who supervise and coach students during clinical rotations) will also benefit, since students will require less instructional time in the clinical setting," he says.

MacPherson says simulation will never replace the experience students get through their clinical placements, but it will better prepare them for their clinical rotations.

NAIT will evaluate SCORE at the end of the 2010-11 school year through graduates' effectiveness, exam scores and surveys of health-care professionals. — Rayne Kuntz



ROOFTOP GARDENS TAKE ROOT

THIS APPLIED RESEARCH PROJECT AIMS TO DISCOVER THE BEST PLANTS AND GROWTH MEDIUM FOR THE UNIQUE MICROCLIMATE OF AN EDMONTON ROOF.

Green roofs – essentially rooftops as planter boxes – are sprouting up across Canada. There's the 2.4-hectare living roof on the Vancouver Convention Centre, the main media centre for the 2010 Winter Games, touted as one of the largest in Canada, and the green roof on the athletes' village. In Toronto, a bylaw adopted this year – the first in North America – requires new buildings over 2,000 square metres to have a green roof. Living roofs, after all, help improve air quality and stormwater management, cool cities, reduce energy consumption and add green space.

In Edmonton, green roofs have been slower to take root, though several have been planted, including on Stantec's Atrium Tower. To seed green roof development, Dr. Leonie Nadeau, a researcher with novaNAIT, the institute's centre for applied research and technology transfer, and a team of seven are studying the plants and growth medium best able to withstand conditions atop Edmonton buildings.

"The microclimate on the roof is very different than what we have on the street," Nadeau says. Plants need to be able to withstand direct sun and greater wind, water loss and temperature ranges with highs of 40 C. And then there's the winter. "We want to make sure there's no winter kill."

Nadeau teamed up with the owners of the 124 Street building that's home to environmental consulting companies Esak Consulting Ltd. and Solstice Canada Corporation to plant the first roof in the study. When Lynette Esak, president of Esak Consulting and a member of NAIT's

Biological Sciences Technology Advisory Committee, and her business partner renovated their office building last year, they had a reinforced roof built to support a patio, daycare play area and green roof. The challenge, though, says Esak, was that they didn't know what would survive on the roof – which is why they offered their building and Esak Consulting contributed \$2,000 for the study plus labour.

Nadeau and Esak planted 12 containers with prairie grasses and forbs most commonly found in southern Alberta, including flax, sage, goldenrod, golden aster and cinquefoil, in the hunt for a selection of low-maintenance plants that grow well together.

Next year, the team will plant a second garden on the reinforced roof of the Williams Engineering Canada building in downtown Edmonton, thanks to an investment of \$45,600 from the Alberta Real Estate Foundation.

Ultimately, Nadeau says she'd like to determine the plants, growth medium and depth suitable for extensive roofs or those that aren't reinforced. "If we could develop a system for extensive green roofs – that would make this more accessible for everyone."

— Kristen Vernon

Above, environmental consultant Lynette Esak and researcher Dr. Leoni Nadeau planted flax, sage, golden aster and cinquefoil on the roof of Esak's office building.

PHOTOS BY LEIGH FREY