



ANDREW RURAK

LITTLE MACHINES, BIG WORLD Edmonton is becoming a major centre for the growing nanotechnology industry.

Small science may mean big boom to City of Edmonton

Research into nanotechnology at the U of A is making the city one of the nation's foremost centres for the industry, and companies are taking notice

JENNIFER HUYGEN
News Writer

Edmonton has recently staked its place as a focus of international attention in the growing field of nanotechnology, with the University of Alberta at the forefront since the new National Institute of Nanotechnology (NINT), a partnership between the National Research Council and the U of A, officially opened their new facility in June 2006.

"Canada has at least on a national level put its eggs into one basket, and that basket is here," remarked Dr Jillian Buriak, the Chair of Inorganic and Nanoscale Materials at NINT, who pointed to the increased investment in this type of research at the U of A.

Dr Hicham Fenniri, Group Leader for the Supramolecular Nanoscale Assembly Group at NINT echoed this sentiment. According to Fenniri, with high-tech sectors like biotechnology and genetic engineering already established in places like Silicon Valley, Massachusetts and Toronto, Edmonton is ready to be recognized for its contribution to nanotechnology.

"In terms of nanotechnology, it's still an open field," Fenniri said. "We'd like to have a piece of the pie in this particular area."

Fenniri believes that nanotechnology can thrive in Alberta because

of our province's wealth, energy resources and desire to diversify the economy.

Construction of NINT, the new 15 000 square metre facility on the U of A campus, cost approximately \$40 million. The building can accommodate 120 staff and 45 guest workers from industries and universities. It also provides training opportunities for up to 275 graduate students and post-doctoral researchers.

"There's a quiet revolution going on in science and engineering that is being catalyzed by nanotechnology."

**DR JILLIAN BURIAK,
CHAIR OF INORGANIC AND
NANOSCALE MATERIALS AT NINT**

"The challenge with doing research in this area is that in order to visualize, see and characterize really small things, you need a lot of instrumentation to do it and it tends to be very expensive. It's not the sort of thing one researcher can get with a couple of grants. It's very much a joint enterprise," Buriak said.

And the effects of this enterprise can be felt all around campus, Buriak

asserted.

"[It] exposes our students—graduate students, undergraduates, post-doctoral associates, and faculty all over campus to this area of research that is at the center of attention," she said.

Apart from the U of A, nanotechnology companies have been making Edmonton's 99 Street their home base. The newly dubbed "Nano Way" facilitates the economic approach to nanotech applications.

"[We need to] create a bridge between university and industry, and I think in a sense NINT is that bridge," Fenniri said. He added that the institute allows products developed or improved on a fundamental university level to be accessible to business for product marketing.

"Part of NINT's mandate is an economic one," explained Buriak, who said that many believe that "nano is the new oil."

Nanotechnology has a multidisciplinary effect on the fields of medicine, science and engineering. Projects currently being developed range from improving the efficiency of the oil sands industry to targeting diseases in more effective and less invasive ways for patients. All done with particles 50 000 times smaller than the width of a human hair.

"There's a quiet revolution going on in science and engineering that is being catalyzed by nanotechnology," Buriak said.

Shortage needs creative solutions: Olsen

NURSE • CONTINUED FROM PAGE 1

The fact that resources are low when enrolment is up means practices must be advanced and tweaked to keep up with this overwhelming need for nurses.

Both Dick and Olson explained that every year, not enough nurses graduate to fill the vacancies of retiring nurses.

"We need a good system to prepare [students], and a good system to maintain [nurses]," Olson explained. "If this change does not occur, a health-care system with undereducated staff and overburdened physicians seems imminent."

Olson went on to say that early initiatives include expanding nursing practices that aim to aid family physicians in managing long-term chronic patient needs, and considering where a shifting of roles would

prove most effective. Incorporating nurse practitioners within care settings is another tactic being tested in trying to diversify roles within the health-care system.

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**JOAN OLSEN,
ASSOCIATE DEAN OF NURSING**

"A recently implemented nursing after-degree program allows students

to move quickly into nursing practices and bring with them a sense of maturity," Olson noted.

Recently, aspiring nurses have been put on waiting lists due to a climbing faculty shortage.

After attending a recent conference for nurses called Toward 2020, Olson said that controversial ideas such as the use of robots to perform simple mundane tasks such as food delivery and patient motor assistance are also seriously being considered.

Although a complex issue, Olson envisions a possible solution to the nursing shortage. "If we can work more effectively as interdisciplinary teams, this might increase the effectiveness of the health-care provider, and help foster a healthier community based on speed, accuracy and education," she said.

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