

Will Alberta's energy boom revolutionize higher education?

ELIZABETH CHURCH

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Economist Jack Mintz has headed west. The former head of the C.D. Howe Institute has left his post at the University of Toronto to start a new school of public policy at the University of Calgary.

It was an offer, the Alberta native said, he could not refuse. "There is really a sense that Alberta is a takeoff place," said Prof. Mintz, who arrived back in time to celebrate the new year. "You can see a lot of things happening."

As oil-boom riches roll in, expectations are building that this new wealth will transform higher education in the province and shake up the postsecondary landscape of the country. Billions in research funds, a campus building boom and university leaders with full pockets on the hunt for talent are adding to the buzz.

"This is a remarkable period in history," said Indira Samarasekera, president of the University of Alberta, who wants to put her school among the top 20 in the world by 2020. "People will look back at this time and marvel."

With wise spending and carefully placed bets, Dr. Samarasekera said she believes the province can use the "Alberta advantage" to position itself as a global magnet for academic talent. Once the bar is raised in Alberta, she reckons interest in the country as a destination for world-class scholars will follow.

It's an impressive vision. Can Alberta pull it off?

Here are some numbers to keep in mind. The value of Alberta's Heritage Fund is expected to be more than \$17-billion by the end of this fiscal year. There are \$1.6-billion in capital projects approved or under construction on Alberta campuses and billions more set aside for research through the Ingenuity Fund and the Alberta Heritage Fund for Medical Research. A new Ingenuity Fund program called Accelerator has earmarked \$100-million over 10 years to support between three and five promising research initiatives, a fund some believe is aimed at an Alberta-grown Nobel Prize.

But translating oil sands riches into Nobel Prize winning research and top-flight postsecondary institutions is about more than just money, caution many on the front lines of this continuing experiment. Others question whether there is the vision or the political will to pull it off. Even with all its prosperity, funding cuts in the 1990s mean that by many key measures such as faculty-to-student ratios, the province's colleges and universities are still playing catch-up to many of their peers in other provinces. A recent report on the residences at the University of Calgary, for example, said that five towers are in such disrepair they likely should

be demolished.

“I will tell you right now that the challenge of Alberta will be priority setting,” said Harvey Weingarten, president of the University of Calgary and the man who wooed Prof. Mintz to his new post. “If you don't establish priorities, then you will diffuse the impact of any money you spend.”

Rather than looking at the piles of cash going out the door, Dr. Weingarten said the real test will be what is produced at the other end, and on this, the jury is still out.

“Don't be fooled by the amount of money being spent,” he said. “To be world class, it's a wonderful aspiration, but you have to be very focused.”

The University of Calgary has identified four core areas, including understanding human behaviour, institutions and cultures, which is where the new school of public policy fits in.

One of the key areas the province is betting on is the emerging science of nanotechnology – the manipulation of molecules and atoms that can be applied to a broad range of areas from computer chips to pharmaceuticals.

Jillian Buriak, an award-winning chemistry professor, is an up-and-coming star in this field that the University of Alberta snagged in 2003.

Nanotechnology is like the “grease in the wheels,” explained Dr. Buriak, an easy-to-like bundle of energy who negotiates a busy university coffee shop with a pair of hiking boots swinging from her bag.

The Toronto native passed up a job offer from Princeton to come to Edmonton, where she is also a senior researcher at the National Institute for Nanotechnology on the U of A campus.

“People were surprised,” she remembers, when asked about her decision to opt for Alberta over the Ivy League. The combination of the national lab that was just getting off the ground and a great university was too alluring to pass up.

Her most recent research efforts involve solar cells and applying nanotechnology to investigate the causes and treatments of disorders such as multiple sclerosis. “It's allowing us to do things that were unimaginable before,” she said.

By concentrating on such breakthrough technology, the thinking is that the province will position itself as more than just an energy powerhouse.

Dr. Samarasekera said she believes it will take only a few breakthroughs to put her institution and the province on the map. “We are at a tipping point,” she said. Finding a cure for diabetes or developing a commercially viable process for producing clean coal is the kind of big win she has in mind. By her estimates, U of A already has three or four individuals who are on this kind of research track

and she is looking for more talent with Nobel-like research potential.

“What you really want to do is identify individuals around the world who are on that track and you bring them to your university and you give them the resources and the freedom to pursue their academic dream,” she said.

Others say it will take a lot more than this and the dollars now going to the system to make Alberta world renowned for higher education.

Martha Piper, the former president of the University of British Columbia and a past vice-president of research and external affairs at U of A, recently wrote an article commissioned by the Canada West Foundation outlining what she would do with an annual investment of between \$2-billion and \$3-billion to Alberta universities. It's contained in a collection of essays called Alberta's Energy Legacy.

Her suggestions for transforming the system include hiring 5,000 new full-time professors to cut student/faculty ratios in half to 10:1. She also recommends the province's universities hire between 20 and 25 Nobel laureates to enrich teaching and stimulate excellence in research.

“Rarely has a geographic region been so well positioned to transform its postsecondary system through a strategic investment,” she wrote.

Having said that, she is skeptical that the province has the vision or the will to enact this kind of transformation.

“It does require some very courageous leadership,” Dr. Piper said. “University presidents can play a role, but it is dependent on political will ... on key people stepping up.”

Dr. Piper points to other jurisdictions – such as Singapore, a country with a population roughly the size of Alberta – that have not been shy about committing huge sums to build a presence in postsecondary education.

Much of the spending happening in Alberta comes from the funds established by past governments, she said, or involves one-time capital projects. There also is a lack of support for scholarship in the humanities and social sciences.

Doug Horner, the province's Minister of Advanced Education and Technology, is the man with his hand on the controls. A second-generation politician with a background in the agriculture industry, Mr. Horner has pictures of wheat fields and oil rigs on his website, not university spires.

Still, the approachable MLA said he understands how important investment in colleges and universities is to the province and the country. “The reality is, as Alberta's economy goes, so does the Canadian economy,” he said. “We are not just talking about today or 20 years from now. We are talking about my grandkids and your grandkids. How are they going to have the same prosperity that we

have today?"

For the moment, the province has its eyes trained on the nuts-and-bolts of system reform and on trying to answer the need for the qualified work force that its red-hot economy is demanding.

Student groups are pressing for better housing as rents in both Calgary and Edmonton soar, for more access to professors, tuition assistance and a greater focus on the quality of teaching. Julie Bogle, president of the student union at the University of Calgary, said the facts that nearly 18 per cent of students leave after the first year and only 61 per cent of students graduate demonstrate the need for more student support. "Education is our future," she said.

At the national level, the Association of Universities and Colleges of Canada is lobbying the federal government for a similar commitment to postsecondary education as a way to remain competitive. The Canada Research Chair program, created in 2000, with an annual budget of \$300-million, is widely credited with attracting and keeping top-notch researchers at Canadian universities.

While Alberta might be well positioned financially to make transformative changes, other universities across the country are involved in top-level research, and the few with established international reputations are outside Alberta.

"Money is not all it is cracked up to be," Dr. Piper said. The country needs to raise its game in research and postsecondary education, but that challenge, she said, need not be limited to Alberta.

"It could happen anywhere in the country if the will was there," she said.