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COLLEGES GUIDE

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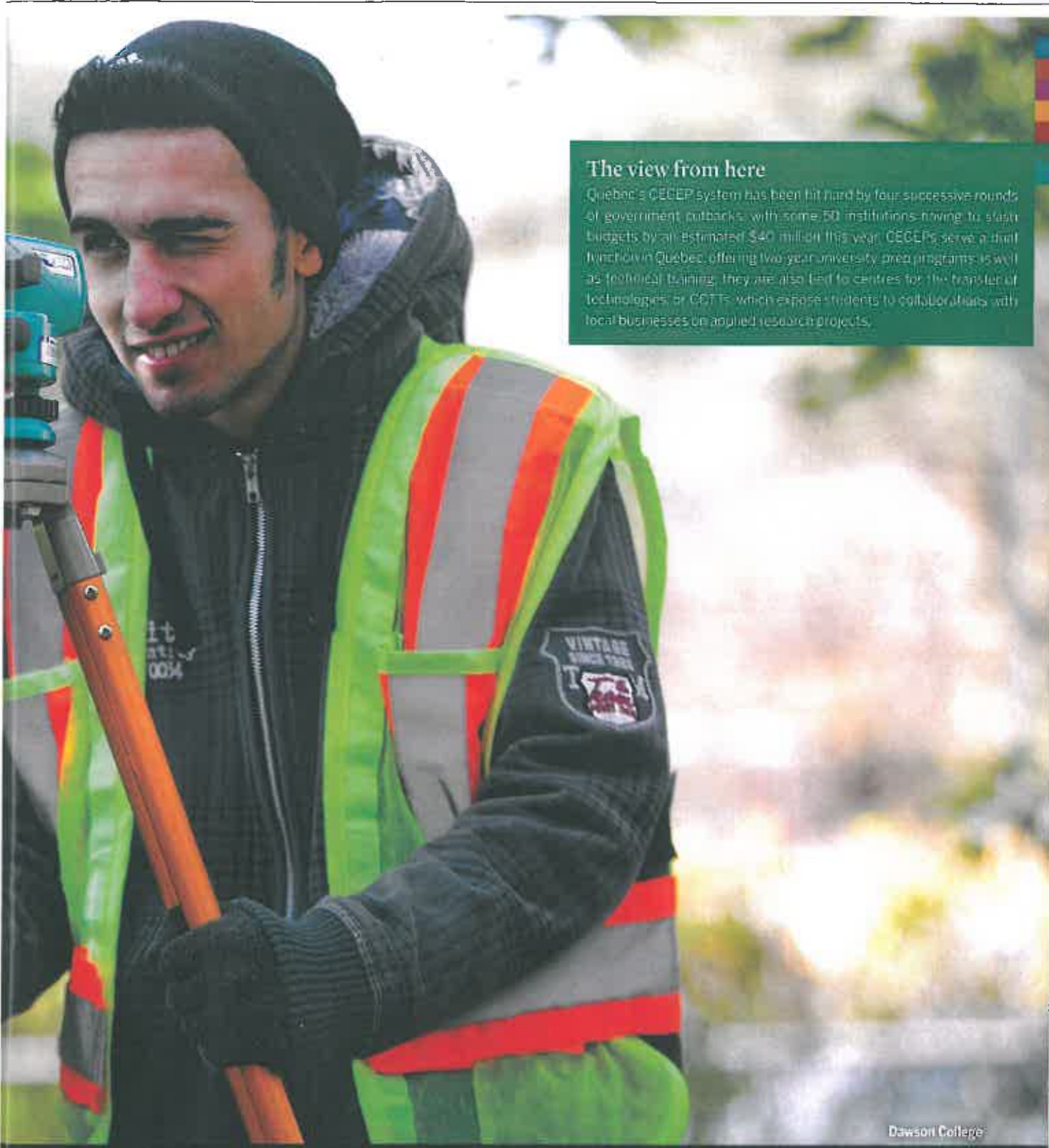
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ROGERS SPECIALS



Quebec



The view from here

Quebec's CÉCÉP system has been hit hard by four successive rounds of government cutbacks, with some 50 institutions now in a state of budget by an estimated \$40 million this year. CÉCÉPs serve a dual function in Quebec, offering two-year university-prep programs, as well as technical training. They are also tied to centres for the transfer of technologies, or CCTTs, which expose students to collaborations with local businesses on applied research projects.

Dawson College



CEGEP S

Work to school

Students in the know are reaping major benefits from college centres for the transfer of technologies

BY JOHN LORINC · PixMob is a wireless lighting technology used by clients Arcade Fire, Cirque du Soleil and the NBA. But the magical technology generated big headlines when Taylor Swift's spring 1989 concert tour featured performers and audience members wearing the firm's LED wristbands, which flash hypnotically in time with the music and create immersive visual light shows.

The technology was developed by PixMob, a Montreal company, and Optech, an applied research centre affiliated with Cégep André-Laurendeau, in Lasalle, Que.

Optech, which hires interns and co-op place-

ment students from the CEGEP, has worked with several Montreal lighting technology companies on everything from 3D probes used in dental applications to high-visibility strobe lights for towers. But PixMob is certainly its flashiest client. Maroun Massabki, Optech's director of development and innovation, is understated. "It's the type of project that comes from our business partners."

Optech belongs to a wider network of 49 "applied research" facilities with ties to 35 Quebec CEGEPs and one private college. These "college centres for the transfer of technologies," or CCTIs, are a fixture of Quebec's post-

secondary system, dating back to the early 1980s and tied directly to the province's economic- and labour-force development goals.

While collaborating with private clients such as PixMob, the CCTIs provide CEGEP students with real-world work experiences and, frequently, job openings. Julien Colimon, 29, for instance, has been with Optech for five years, as an optical technician.

"After CEGEP, I travelled. Then, after six months, I started looking for a job, and I came back to the CEGEP, and my old teachers were really great at helping me land a job," he says. During his three-year physics engineering technology program at Cégep André-Laurendeau, Colimon did two work terms, one of which was maintenance of a "really big laser." Colimon says that lab experience, in particular, helped him land the Optech job.

Now, he might spend a day assisting the city of Montreal with a troublesome interactive LED lighting project in a parking lot, or help a private company figure out the parts

PHOTOGRAPH BY ROGER LEMOINE



RADIANT
INNOVATION

Good optics: *'Not one thing I find the most fun. I find everything fun,' says Colimon.*

tion for CCTTs, the Quebec government established the first six centres in 1983 and gradually expanded the network so new facilities could work closely with local employers. "You always work with a customer," says Boulé. "We don't do research only to do research."

CCTTs focus on helping companies innovate. For example, in 2009, Centre de Productique Intégrée du Québec (CPIQ), an applied research centre linked to Cégep Sherbrooke, partnered with Quebec firm Portes Lemieux to modernize its factory. Portes Lemieux, which makes customized French doors for U.S. home builders in small batches, wanted help setting up software to run robotics equipment. Three years later, in 2012, Masonite, a door manu-

facturer based in Tampa, Fla., with US\$1.8 billion in sales, bought Portes Lemieux. "They knew how to make short lots, but at mass-production-system cost," explains CPIQ business development manager Gilles Charron.

Thanks to success stories like these, the CCTT formula has been adopted outside Quebec with the establishment of "technology access centres," or TACs, linked to community colleges. Across Canada, 32,000 students do college-based practical research, and those numbers are growing as the TAC and

CCTT networks expand throughout the college/CEGEP system. "They're at the core of applied research projects at colleges," says Christine Trauttmansdorff, vice-president of Colleges and Institutes Canada.

Funds to support the new TACs are administered by the National Sciences and Engineering Research Council. To date, 14 TACs have each received \$350,000 for operating expenses, while 11 existing CCTTs in Quebec were granted an additional \$100,000 each. Total funding has risen from \$5 million annually to \$60 million. Newly established TACs include the Bluewater Technology Access Centre in Sarnia, Ont., and

the Centre for Oil Sands Sustainability, a nanotechnology research hub at the Northern Alberta Institute of Technology.

Despite all the buzz about TACs in English Canada, CCTTs were first. "The CCTTs have been ahead of the curve in

many ways," says Trauttmansdorff. And students are definitely benefiting.

Jacque Goupil, 20, completed a co-op last winter, developing software and cable systems for a local floor-heating manufacturer that was working with CPIQ. After finishing his informatics program at Sherbrooke, Goupil came back to the company on a part-time basis, and plans to stay until he begins a university-applied math program next year. "It's now my job and not just part of my schooling," he says. ♣

—with Zane Schwartz

'Each CCTT is part of a CEGEP, [but] the way it works is different than a regular university research group'

it needs for an eye-camera scanner it's developing, then costing it out for them.

"I like that, month to month, what I do is completely different, so there's not one thing I find the most fun. I find everything fun," Colimon says.

It's these kinds of customers (many small- and medium-sized companies) that account for tens of thousands of Canadian jobs, though they tend not to have the money for R&D. Quebec's technology transfer network attracted 4,000 such companies last year. The CCTTs have 1,200 experts—engineers, technicians, Ph.D.s, etc.—and also work with 300 CEGEP instructors in a wide range of fields.

The CCTTs do not, however, function like university research labs.

"Although each CCTT is part of a CEGEP, the way it works is different than a regular university research group," explains Optech's Massabki. "Most of the staff of CCTTs aren't professors or technicians giving classes."

According to Claire Boulé, director general of Réseau Trans-tech, the umbrella organiza-

OPPORTUNITY

Technology powerhouses

Besides collaborating with local businesses, CCTTs provide CEGEP students with various opportunities, including internships, co-op work placements, part-time jobs and post-graduate openings. Their ranks include:

- Centre for Innovation in Microelectronics of Quebec (CIMEQ) and Collège Lionel Groulx in Sainte-Thérèse. Since 1983, CIMEQ has worked with private partners on a range of software/system applications and simulations, including alarms, wireless communications and building-access control.
- Biopierre, Centre de développement des

bioproduits at Cégep de La Pocatière, which was established in 2007 to develop innovative bio-products made from forestry and agricultural waste. It received a four-year, \$2.3-million grant from NSERC in 2009. Among its products: fertilizer made from waste sheep's wool.

- Centre de technologie minérale et de plasturgie, at Cégep de Thetford, a 31-year-old facility situated near Quebec City. Originally focused on mining, the centre expanded into plastics-related research in the early 1990s, and has worked recently with a Sherbrooke firm that makes bike accessories. ♣