

Innovation Place Newsletter
June, 2002 Edition

Official opening of Dr. Jack McFaul Building

A pioneer of Saskatoon's Innovation Place is being honoured by having the newest building in the research park named after him.

Dr. Jack McFaul was an original member of the Management Advisory Committee of Innovation Place until his death in 1999. He was also a member of the Board of Governors of the University of Saskatchewan at the time of the creation of the research park more than 20 years ago.

Crown Investments Corporation Minister Maynard Sonntag officially opened the Dr. Jack McFaul Building on Wednesday, June 5 and paid tribute to Dr. McFaul and his family.

"Naming the building after the late Dr. McFaul is an appropriate tribute to a man who contributed in so many ways to the university, the city and companies like SED Systems Inc. and POS. The building reaffirms the government's ongoing commitment to the research and technology sector," Sonntag said. "The organizations that occupy this building, and indeed all of the tenants of Innovation Place and the Regina Research Park, are helping to diversify Saskatchewan's economy."

The building at 421 Downey Road is a 78,000 square foot office laboratory building and is already fully occupied. The occupants include Dow AgroSciences, the Canadian Food Inspection Agency and AMEC E&C Services Ltd. Construction of the building was completed in 2001 at a cost of \$9.5 million.

The tenants of the two research parks contribute just under \$390 million per year to the economy of Saskatchewan, and employ almost 5,900 people directly and indirectly, Sonntag said.

Research parks' data communications infrastructure receives major overhaul

Extensive upgrades to the data communications infrastructure of Innovation Place are nearing completion, reports research park General Manager Bill Sitter.

Only a few years ago, the park's LAN network was considered state-of-the-art. However, to remain technologically advanced, the network serving the research parks in Saskatoon and Regina required a major overhaul.

Rather than taking a piece-meal approach to improving the infrastructure, park management made the decision to completely change the network's core routing and switching equipment. "The network now offers greater capabilities than ever before," says Sitter.

"We now have a core router, switching equipment and software that is able to categorize and prioritize data, voice and video traffic for optimum bandwidth utilization. In addition, we are able to monitor and manage our tenants' LAN usage to greatly improve service quality. This is a major change from the past, when we simply provided high speed Internet access," says Sitter.

"Nortel's Passport 8600 routers are widely used by major corporations in North America, because of their exceptionally reliable performance and compatibility with other manufacturers' equipment. Nortel is eager to strengthen their presence in this market and demonstrate their capabilities. They considered Saskatchewan's research parks the perfect showcase," says Sitter.

"To date, in terms of their assistance in planning, engineering and implementing the system, they've performed extremely well. They've bent over backwards to provide exceptional service."

The installation of new routers and switchers will provide better access to the now more than tripled the bandwidth available to tenants of the research parks, says Neil Currie, who manages information technology for both parks. "The upgrade three years ago provided tenants with a shared 6 Mbs half-duplex service. When fully implemented this summer, the new network will deliver a shared 20 Mbs full-duplex service.

"Six Mbs half-duplex would only allow us to send 6 Mbs out of the park, or 6 Mbs into the park, but never both at the same time. Upon full implementation of the upgrades, we'll be able to handle 20 Mbs of Internet traffic both ways at any one time," says Currie.

Individual tenant basic Internet access will increase to 2 Mbs half-duplex (standard), included in their monthly operating charges, with scalable options up to 1 Gigabit.

"There are certain clients in both research parks who continually require more bandwidth, depending on their growth and the type of business they're in. Those clients will be able to purchase additional bandwidth to meet their foreseeable needs, at a very competitive cost, because of the economies of scale of research parks net-based business," says Sitter.

Final decisions on the network upgrades are a result of a survey first distributed to tenants of the research park in January of 2002.

"A very important emerging need identified in the survey was increased reliability on both the parks' infrastructure and the Internet," says Currie. "It also became clear that our tenants will be dramatically increasing their net-based business processes over the next five years."

"Our goal is to meet these needs, while delivering state-of-the-art reliability," says Sitter.

"As part of our improved infrastructure, we've instituted redundant up-link connections that will provide failover protection should our primary bandwidth provider go down," says Currie. Two new Cisco routers will fully implement the SRNet connection between the two parks. "As well, we will be adding two additional routers to provide two separate connections to the Internet for each park. Also, a dedicated connection between the two research parks, referred to as a LANSPAN, will provide additional reliability. If the Internet connection at either park fails, traffic can be routed through the other park's connection," says Sitter.

"To improve Internet access reliability, we are planning to connect another ISP (Internet Service Provider). This is intended to be a separate backbone from our primary ISP, making it an effective means of redundancy," says Currie.

Both research parks will be implementing full client 'Managed Network Services' to provide appropriate levels of monitoring, trend reporting, analysis and optimization of the park networks, says Currie.

"As part of our commitment to reliability of our LAN, we've established an agreement with SaskTel for management and servicing of all of our devices with SaskTel and Nortel. It's a proactive management system that can identify many potential problems before they occur. SaskTel's operations centre monitors the system 24 hours a day, seven days a week. There are always real people on hand, monitoring the system and answering the phones. All reported or alarmed troubles are issued a time-sensitive ticket that escalates every 15 minutes that it isn't resolved," says Currie.

On a trial basis, the administration offices of Innovation Place have also just installed a new Voice-Over IP (VOIP) telephone system (SaskTel's IMS), which uses an Internet-based connection for communications and video-conferencing. "Initially, the new telephones will only be used internally and between the administration offices of Innovation Place and Regina Research Park," says Currie.

"We are testing this system for SaskTel. We believe it's the first deployment of it in Saskatchewan," says Sitter.

"With the VOIP system, you can dial other users of the IMS system as if you're making a local call since the voice and video is transmitted over the network infrastructure and not the phone system. It will greatly improve business communication between the research parks in Saskatoon and Regina," says Currie.

The video-conferencing capabilities of the system should also reduce the need for travel between the parks, allowing real-time face-to-face meetings using the VOIP telephone and webcams.

"Eventually, we expect this telephone system to be available to tenants of both research parks as a cost-efficient option," says Currie.

The improved communications infrastructure will enhance both research parks' ability to attract tenant companies who require leading-edge communications services to showcase their core competencies.

"This is the kind of technology that will attract external international companies - organizations who, for example, may be conducting research at the Canadian Light Source synchrotron and will need to transmit huge electronic files," says Sitter.

"We're trying to be proactive in our services. It's not just a matter of catching up to industry standards, but we want to lead the marketplace with our technological capabilities. We've done what we can to respond to the growing business applications for web-based technology for the next five to ten years."

Tenants of Innovation Place and Regina Research Park are invited to learn more about the network enhancements by attending an upcoming Orientation Session. Details will be announced shortly.

Biotech industry benefits from U of S VCB co-op education program

The Virtual College of Biotechnology (VCB) was established by the University of Saskatchewan in 2000 to support the province's rapidly expanding biotechnology industry. The VCB trains students in all aspects of biotechnology, from the management and marketing of biotech companies to the scientific, social, regulatory and ethical sides of the industry.

The term 'virtual' relates to the administrative structure of the biotechnology college, which utilizes the faculty, facilities and programming of other colleges, similar to the U of S College of Graduate Studies. VCB undergraduate programs are delivered by the U of S Colleges of Arts and Science, Commerce, Agriculture and Engineering.

"Our goal is to develop an educated workforce that will meet the needs of the biotech industry," says Barbara Buchinski, Biotechnology Co-operative Education Co-ordinator.

In May of 2002, the Virtual College of Biotechnology launched its first biotechnology co-op education program, with students starting four-month paid work terms with local biotech organizations.

"The work terms themselves are actually University courses," says Buchinski. "That meant we had to go through all of the red tape involved in approving these courses before we could go out and approach employers. As a result, we got a bit of a late start, and are still looking for placements for some very bright Biotechnology Management students from the College of Commerce. We expect that the numbers of students will be much higher for the next work term. We want to grow the program slowly, as more employers learn about the program."

The work terms are four months in length. The current summer work term started in May and continues through August. Another work term will commence in September and goes to the end of December. A third work term will begin in January of 2003 through April.

Students applying for placement in the biotechnology co-op education programs must have completed at least two years of their academic studies.

"Upon acceptance into the co-op program, the students can then go for four-month paid work placements in the industry. They would only work in an area related to their area of study," says Buchinski.

For example, students in the four-year "Sociology of Biotechnology" B.A. program will be looking for positions in the fields of communications and public relations.

"Commerce students in Biotechnology Management are looking for positions within the business end of biotech - in the areas of commercialization, regulatory processes, marketing and financing," says Buchinski.

"Students in our four-year B.Sc. programs in Biochemistry, Biology, Cell Biology and Microbiology will be looking for lab positions."

After the four-month work term is completed, students return to the classroom to continue their studies.

The co-op education program benefits students by providing them with valuable work experience in their area of study, says Buchinski. "It's a form of experiential learning, and far more beneficial than the student going out and flipping burgers or being in a job unrelated to their education.

Employers in the biotech sector also benefit from the co-op program, says Buchinski. "It's an ideal way for managers to fulfill their company's human resource needs. If they need to fill in for an employee on sick leave or maternity leave, or if they require additional employees to help out through a busy season or work on a specific project, the VCB co-op program can be a valuable resource."

The co-op program also allows employers to check out the potential of these students as future employees, adds Buchinski. "The four-month term provides an opportunity to see how the student fits within their organization. The company may then want to keep the student in mind for permanent employment after completion of their studies."

Co-op students who go on to become full-time employees are already familiar with the organization and its culture. "They don't require as much training. The employer is already familiar with the student and knows whether or not they will fit in with the organization. It's a very good recruitment tool," says Buchinski.

The University of Saskatchewan also realizes benefits from the co-op program, she adds. "The University wins because they get valuable interactions with industry. We're very open to feedback from industry in regards to our curriculum. For example, if the employers tell us that the students require more classes on the regulatory system, we'd consider that. We find that we really benefit from our collaborations with industry. It's a win-win-win situation for everyone involved."

Buchinski says that her research indicates that employers who've experienced working with co-op students have a "try it, you'll like it" attitude.

"Once employers have worked with a co-op student, they tend to repeat their participation. Employers are very happy with the program," says Buchinski.

"Our goal is to give students valuable work experience, and provide employers with a well-educated, well-trained workforce."

Organizations interested in placing a VCB student are invited to contact Barb Buchinski by email: VCB.coop@usask.ca .

Innovation Place/UST Award of Innovation recognizes "molecular wire" developers

The first annual Innovation Place/UST "Award of Innovation" was presented May 14 to two University of Saskatchewan (U of S) scientists who've developed a "molecular wire" that could revolutionize micro-electronics and biosensor technology.

Biochemist Jeremy Lee and his former post-doctoral fellow Palok Aich have discovered a new DNA molecule - M-DNA- that conducts electricity. They've obtained a U.S. patent, and plans are underway to create a new company - Advanance - to commercialize the technology with the help of a \$277,000 investment from Toronto-based University Medical Discoveries Inc. (UMDI). Development work has also been supported through a \$271,000 grant from the Saskatchewan government's Strategic Investment Fund.

"M-DNA is a significant scientific advance that will provide an opportunity to create a new company and a new industry in Saskatchewan," says UST President Branko Peterman. "It will also encourage highly skilled U of S graduates to stay in the province and apply their knowledge."

Proximity of the new company to the Canadian Light Source synchrotron will likely draw companies working in the emerging area of nanotechnology to Saskatoon, he added. M-DNA (the 'M' stands for metal-containing) is a marriage of molecular biology and electronics. Conducting metal ions such as zinc, cobalt or nickel are inserted into the centre of the DNA helix, creating an effective semi-conductor that is only one molecule (roughly two nanometers) thick.

Since DNA has the natural ability to self-assemble, M-DNA is in effect a self-assembling molecular wire that could become the building block for nanometer-scale (one-billionth of a meter) bio-electric circuits. These tiny and speedier circuits could potentially replace the smallest of silicon microchips that drive the world's information technology. M-DNA could also pave the way for highly sensitive new biosensors that help reduce adverse drug reactions, improve diagnosis of disease, predict the outcome of disease and reduce the cost of drug development. Other potential applications include environmental monitoring, security and national defence.

The \$2,500 award was presented at the "Celebrate Success! Gala," hosted by the Saskatoon and District Chamber of Commerce and Women Entrepreneurs of Saskatchewan.

The award recognizes the efforts of U of S scientists who are developing new technology into marketable products. The selection committee includes a representative from each of Innovation Place, UST Inc., and the U of S.

Amana Tech reports success in Dubai

Janea Bellay, Marketing Director of Amana Tech Inc., recently returned from Dubai, United Arab Emirates after signing a major contract with a multi-billion dollar group of companies, Al Ghurair Private Company, to provide web hosting services to more than 40 companies within the Al Ghurair Group. The agreement identifies the future use of Amana Tech's other web-based services such as live satellite broadcasting, real time streaming, web design and database development.

The contract was signed at the Canadian Consulate in Dubai on May 11 in a ceremony attended by a host of dignitaries and diplomats.

Nezar Freeny, President of Amana Tech, said, "The reason we are targeting the Arabian Gulf Region is our ability to provide high-quality services, advanced technology at low cost to our well established clients in the region. Most companies in the region previously used U.S. companies for their web hosting. Now, we offer the same services at a lower cost. Our

competitive advantage is our multilingual and multicultural abilities. In a market where more companies are going global, our clients are looking for services in multiple languages. We offer that niche service to our clients.

"Our Saskatchewan focus is on the small- to medium-enterprise market," said Freeny. "Our understanding of the small business market in Saskatchewan allows us to provide our clients with high-quality services at reasonable costs." Amana Tech Inc. will maintain its headquarters at Innovation Place to efficiently serve both its geographical markets.

Who's new to Saskatchewan's research park community?

New to Innovation Place in Saskatoon is:

- **Arxus Web Group**, 112G - 116 Research Dr. Contact Greg Paulhus at (306) 934-7443 or email: info@arxus.com
- **SemBioSys Genetics Inc.**, #308 - 410 Downey Rd. Contact Jim Williams.
- **Canadian Wheat Board**, 310 - 15 Innovation Blvd. Contact Craig Douglas.

Changes of address:

- **Special FX Fax & Data Services** is now located at 112B - 116 Research Dr. Contact: Dave Criddle.

Jazz in the Park!

Reserve your lunch hour on Thursday, June 20 to attend "Jazz in the Bowl," beginning at 12 noon, just outside the Galleria Building.

"Jazz in the Bowl" has become one of Innovation Place's most popular annual traditions - a highly anticipated kick-off to the SaskTel Saskatchewan Jazz Festival.

The Kenny Marco Quartet - Sanctified Creole - will return by popular demand to entertain all in attendance.