

**Innovation Place Newsletter
January 2003 Edition**

Collaborative research program brings world leader in animal genomics to Innovation Place

Genome Canada's investment in a three-year \$27 million collaborative research project focusing on livestock disease and food safety has brought one of the world's leading animal genomics companies to Innovation Place.

The Chicago-based tech company, Pyxis Genomics (formerly AniGenics, Inc.), selected Innovation Place in Saskatoon as the headquarters for its new wholly-owned Canadian subsidiary, Pyxis Genomics Canada Inc.

Pyxis Genomics is the scientific leader in applying functional genomics to animal health to enhance productivity and wellness. The privately-held company focuses on identifying genes and gene products that enhance and predict animal health and productivity while improving food safety and quality.

Among the company's best known technology solutions is CattleArray product line, used for functional and comparative genomics. The first CattleArray contained 3,820 selected cDNA clones printed in duplicate on a single glass slide. Following the success of this array, the company will soon be launching the CattleArray7600, with over 7,600 selected cDNA clones.

The new \$27 million research project, entitled "Functional Pathogenomics of Mucosal Immunity," is intended to identify host factors that influence disease resistance to common pathogens of food animal species, including microbes that also cause food-borne illness in people. The National Institute for Animal Agriculture estimates that respiratory disease in beef cattle alone costs the industry more than \$1 billion (U.S.) annually, while E. coli leads to more than 70,000 human cases of food poisoning each year.

Pyxis' research efforts are centered on understanding innate immunity at the mucosal level of the gastrointestinal and respiratory tracts of animals, particularly in cattle and poultry. Pyxis will perform this research with a consortium of partners including the Veterinary Infectious Disease Organization (VIDO), University of Saskatchewan, University of British Columbia, Simon Fraser University and Inimex Pharmaceuticals Inc. in Vancouver.

"Pyxis has developed a state-of-the-art genomics discovery platform for animal health and food safety, with the capacity to bring to market new animal health compounds, feed additives and nutraceuticals. The driving force behind that are the recent bans on antibiotics, and with increased microbial resistance to antibiotics, the industry is now looking for alternatives. The emergence of new non-antibiotic enhancers of health and productivity represents a unique market opportunity for Pyxis," says Tyler Bradley, who heads up business development at the Saskatoon office. Bradley comes to Pyxis as part of the Westlink Technology Commercialization Internship, a two year program sponsored by Western Economic Diversification (WED) and NSRC.

"Pathogens attack mucosal surfaces. The major ones are the respiratory tract and the lining of the intestines. What the project intends to do is give a step-by-step account of the fight between host and pathogen. This research will help us to understand how gene function relates to immunity or protection from infection. Our functional genomics discovery platform

provides opportunities to screen compounds that enhance health and productivity as well as new targets for immune enhancement," says Bradley. These compounds have the potential to be marketed as non-antibiotic feed additives for livestock, and as nutraceuticals for companion animals and people.

While Pyxis' research will apply to the area of animal health, Inimex Pharmaceuticals will focus on applications leading to the development of human health care products.

The \$27 million project is the single largest food animal genomics initiative in the world. Genome Canada, the not-for-profit corporation created two years ago by the Canadian federal government to advance the country's biotech industry, has invested \$13.5 million in the project. The two corporate sponsors - Pyxis Genomics and Inimex Pharmaceuticals - are contributing a total of \$10.5 million. Equity financing of \$2 million was led by Foragen Technologies LP, a leading agbiotech venture fund managed by Foragen Technologies Management.

"We're actively seeking strategic collaborators and investors to help in development and commercialization of new technologies coming out of the Genome Canada research project, as well as other research projects that Pyxis is involved in," says Bradley. The Pyxis team is very excited to have the opportunity to partner with VIDO on this project, says Bradley. "VIDO is a world-renowned animal health research institution with high calibre researchers. The organization has a very high profile."

Dr. Lorne Babiuk, director of VIDO and principal investigator of the research project says, "It's fantastic to have Pyxis as a collaborator. Their involvement will accelerate the establishment of VIDO and Canada as a major player in animal genomics internationally."

Lawrence B. Schook, Ph.D., President and Chief Scientific Officer of Pyxis Genomics Canada says, "We anticipate new insights into critical genes influencing animal production, animal health, food safety and biosecurity. Partnering with VIDO ensures we achieve significant outcomes to fuel the animal health and feed industries."

"The start-up of the Canadian office is a huge step forward for Pyxis," says Bradley. Pyxis is now in the process of recruiting candidates for five positions: associate director of genomics, laboratory manager, research scientists and project managers. Bradley says that interest in the positions is very high, not only from within Saskatoon, but from across the country. Another 30 positions are expected to be created at VIDO in connection to the research project.

Construction is currently progressing on a \$17.3 million expansion to the VIDO building, located adjacent to Innovation Place on the U of S Campus. Bradley says that Pyxis researchers will begin working on-site at VIDO until the construction of the new wing is completed in May of 2003.

"We're also looking at other space around Innovation Place for our Canadian headquarters," says Bradley, who is headquartered temporarily at the Atrium Business Centre.

"In terms of locating in Saskatoon, Innovation Place is a great place for a company like Pyxis Genomics. The infrastructure is here. The lease rates aren't overly burdensome for a biotech start-up."

For more information about Pyxis Genomics Inc., check the company's website at www.pyxisgenomics.ca or e-mail Bradley at: tyler@pyxisgenomics.com .

TELUS awards major contract to Critical Telecom

Critical Telecom, a leading developer of broadband technologies located at Innovation Place, recently announced that TELUS Corporation has selected Critical Telecom's FiberLINK solution for expanding the footprint of TELUS' ADSL based service capabilities beyond the reach of existing central offices. Critical Telecom and TELUS recently concluded a contract for deployment of the FiberLINK technology. FiberLINK will allow TELUS to extend its Velocity® high speed Internet service to meet the increasing demand for broadband service by residential and business subscribers in Alberta and British Columbia.

"We have done a comprehensive analysis and evaluation of the FiberLINK technology and are very pleased with the results. The simplicity of the solution in utilizing our existing infrastructure in the outside plant is a major benefit of this technology," says Girish Pathak, Chief Technology Officer, TELUS.

"We are very pleased FiberLINK has been chosen by TELUS as a key solution for their extended range DSL program. Our solution allows TELUS to offer each subscriber full rate ADSL bandwidth in support of next generation services over TELUS' access network. We look forward to working closely with TELUS to deploy FiberLINK," says Oliver Cruder, President and Chief Executive Officer, Critical Telecom.

Critical Telecom's FiberLINK technology enables service providers to deliver full rate ADSL beyond the reach of existing central offices. The solution can be deployed much more rapidly and cheaper than conventional remote Digital Subscriber Line Access Multiplexers (DSLAMs) utilizing a service provider's current infrastructure in the outside plant.

Critical Telecom Corp. focuses on providing last mile access solutions for the telecommunications industry. The tech company is a member of TRILabs, which is Canada's leading research consortium in information and communications technology. TELUS Corporation is one of Canada's leading telecommunications companies, providing a full range of telecommunications products and services that connect Canadians to the world. The company is the leading service provider in Western Canada and provides data, Internet Protocol, voice and wireless services to Central and Eastern Canada.

First Nations firm brings wireless technology to rural Saskatchewan
Garry Anaquod and David Joyce have a vision. They are the owners of Brown Eyed Communications Inc. (BeComm), a unique start-up company, located at 150 C&D - 6 Research Drive in Regina Research Park, that is bringing wireless telecommunications to remote First Nations reserves and rural areas.

Anaquod and Joyce believe that having access to a modern telecommunications network is an essential condition for economic development. In the past, remote regions have been removed from the modern world due to the high cost of fibre optics and other communications options. BeComm is changing this by introducing cost-effective wireless communications.

Fixed wireless broadband is a system that was originally designed for the vast regions of Third World countries that couldn't afford to install underground pipelines for telecommunications.

Anaquod and Joyce see tremendous opportunities for this technology for under-served rural regions of our country. SaskEnergy has used it for eight years in the harshest of northern Saskatchewan weather conditions and Canada's National Defence Department has recently chosen to invest \$4.6 million in a company that produces license-exempt fixed wireless equipment.

"Unlike any other rural telecommunications solution, fixed wireless broadband is a cost-effective and economically viable solution," says Joyce, who is the company's Chief Operating Officer. "In the light of rural depopulation of rural Saskatchewan, business class broadband access provides an appealing option to stay in the community and use broadband to start a business, or as a basis for a business park, not to mention full-featured distance learning."

"You can count on one hand how many organizations there are in Canada that deal with wireless telecommunications, and we are the first First Nations company in Saskatchewan to do this," says Joyce.

BeComm is currently working on its proof-of-concept for this technology and is excited to be entering a growing market with a very bright future.

"We believe in the future of wireless telecommunications and alternate broadband technology," he says.

BeComm has done test links with Access Communications and is working with organizations such as Health Canada, which says fixed wireless fully satisfies its telemedicine requirements for two-way broadband, as well as many other community needs.

"We offer a unified package of telecommunications and web-based developments, and consulting. The communications infrastructure we intend to build will carry the web-based services we develop, and our consulting services will help people take advantage of it." BeComm is pleased with its decision to locate its operations in Regina's Research Park. Joyce cites the benefits of networking with other IT companies and being so close to the Saskatchewan Indian Federated College (SIFC) as only two of the many advantages of being a part of Regina's growing research park.

Garry Anaquod is the Chief Executive Officer and Chief Technology Officer of BeComm. With degrees in Computer Science and Physics, Anaquod has carried an IT vision for First Nations communities for many years as he spent 11 years instructing computer science students at the Saskatchewan Indian Federated College. Along with his solid technical background, Anaquod has experience as a telecommunications consultant for the File Hills Agency. Born in Saskatchewan and a member of the Muscowpetung First Nation, Anaquod has extensive personal and business networks among Saskatchewan First Nations.

David Joyce was born in British Columbia and is a member of the Sto:Lo Nation in the Fraser Valley. Armed with a degree in Indian Studies from SIFC and a passion for Information Technology and Indigenous peoples' self sufficiency, Joyce is well-equipped as BeComm's Chief Operating Officer. His strong communications skills and passion for Internet innovation have been demonstrated through his work with the PFRA, the Regina Alternative Measures Program, the FSIN and SIFC.

Prior to teaming up for this exciting new venture, Anaquod and Joyce worked together at the Federation of Saskatchewan Indian Nations on their e-learning program for First Nations people and created and expanded Indigenations.com, a culturally relevant community window on the Internet.

"Our roots are based in technology and First Nations issues, so we couldn't be happier doing what we love to do best," says Joyce.

"This is the most significant tool for self-sufficiency to come along in a long time, and not just for First Nations. All rural communities will gain the same advantage with this urban class connectivity."

SLFDB addresses labour shortage crisis

Labour skills and skill shortages are going to be the biggest issues impacting the Canadian economy over the next decade, says Janis Stone, Executive Director of the Saskatchewan Labour Force Development Board (SLFDB).

It's a crisis that must be tackled now, says Stone, as the shortage of skilled workers is already having a significant impact upon business and industry, in Saskatchewan and across the country.

"The labour shortage is affecting every industry sector," says Stone. "Estimates provided at the National Labour Summit reveal that just ten years from now Canada is going to be one million workers short. That's assuming that in Saskatchewan all of our aboriginal youth will make a successful transition into the workforce. By 2010, it's going to be a very serious issue."

Even the science and technology sector is not immune to the impending labour shortage, says Stone. "In Saskatchewan right now, there's a real shortage of people skilled in processing and production - something that companies at Innovation Place are no doubt aware of. We've had both John Cross, president of Philom Bios, and Peter McCann, president of Ag-West Biotech, speak at our conferences and board meetings."

Stone adds, "We have been told that three projects are behind at the synchrotron because they can't find sufficient numbers of people with the skills they need."

The purpose of the SLFDB is to provide leadership in the areas of training and socio-economic development, by sharing information and providing a forum for dialogue between labour market partners. "We promote the development of effective workforce training programs that meet the needs of both industry and individuals."

Established in 1994, the SLFDB is a labour market partnership, representing business, labour and all of the industry sectors.

Through reference groups, the board brings together the diverse perspectives of labour market partners. These reference groups include Business, Labour, Education and Training Providers, Agriculture, First Nations, Metis, Women, Persons with Disabilities, Racialized Canadians, Low Income People, Youth and Government.

The federal government participates through representation by Human Resources Development Canada. The provincial government is represented through Saskatchewan Learning and Labour.

Stone says, "We hold consultations twice a year with all of our reference groups. Any policies or recommendations that we take to government are first discussed with our reference groups."

"The SLFDB primarily focuses on labour market skill shortages, Workplace Literacy, Prior Learning Assessment and Recognition (PLAR), Career Education, and Education/ Industry Partnerships," says Stone.

The SLFDB actively lobbies both the federal and provincial governments, to provide advice on labour market issues. Key issues in 2003 include Aboriginal Employment Development, Essential Workplace Skills, PLAR Services, Human Resource and Succession Planning, Career Development and Apprenticeship.

For Saskatchewan to survive the impending labour crisis, it will be essential to implement programs that will boost workplace and literacy skills; recognize prior learning and work experiences in adults; and bring aboriginal youth into the workforce, says Stone.

"The solutions lie in partnerships. Industry has to do a better job of talking to young people and to parents about what kinds of opportunities there are. The education system has to respond with the necessary skills training and more applied learning. We have to recognize prior learning in adults, to build an effective workforce. We're working to make that happen," says Stone.

"We spend a lot of time and effort promoting these issues, through advertising campaigns, career days and the annual Cardboard Boat Race event in Ile a la Crosse. This year, we've taken on the Skills Canada Competition. Participants can vie for bronze, silver and gold medals in a variety of trades and technical skills. In 2003, the competition will be held in Regina at SIAST," says Stone. Gold medal winners can progress to the national competition in Ontario. From there, winners go on to the international event, held this year in Switzerland.

Another upcoming SLFDB event is the conference entitled, "Aboriginal Employment Strategies That Work," February 4 and 5 at the Saskatoon Inn.

For more information about SLFDB events and programs, check the comprehensive website at: www.slfdb.com .

Changes of address

Regina Research Park:

Please note that the Saskatchewan Opportunities Corporation, Finance and Administration Department, has relocated to the Regina Research Park office in the Terrace Building, Suite 140 - 10 Research Drive. Call (306) 798-7275.

Join Pilates at Innovation Place

Beginning January 17, residents of Innovation Place will have the opportunity to participate in a new fitness venue. Joan Germain Pilates Studio will bring professional pilates instruction to the park's fitness centre, offering a one-hour class each Friday from 12 noon to 1:00 p.m.

Pre-registration for classes is required. Cost will be \$107.00 (includes GST) for 10 weeks (one lesson a week).

Students may wear whatever they feel comfortable in (sweatpants, leggings, etc.). Shoes are not required.

Each class is limited to 10 participants; register early to avoid disappointment. For more information, call Joan Germain Pilates Studio at 651-0776.