



# F O R A G E N VISIONS

## Cevena Bioproducts Inc. Tackling a Killer

INDUSTRY PROFILE

Tragic causes of death like cancer, AIDS, and drunk driving deservedly receive much attention in the media. However, few people know that cardiovascular disease kills more than the next 14 causes of death combined! In the United States, CVD has been the leading cause of death every year since 1920.

An Edmonton company is seeking to reduce the high incidence of this ubiquitous killer. Cevena Bioproducts Inc. develops and produces proprietary nutritional ingredients scientifically proven to manage and prevent cardiovascular disease (CVD).

“We have an opportunity at Cevena to help make a positive impact on health, globally!” says company President Kimmo Lucas.

The two major CVDs are coronary heart disease (CHD) and cerebrovascular disease (stroke), together accounting for 72% of all CVD-based mortality. CHD accounts for 54% of all CVD, and of that, 56% is due to high cholesterol. Many of these deaths



are preventable, as it is well established that a 10% decrease in cholesterol levels leads to a 30% reduction in the incidence of CHD.

As research findings continue to demonstrate a strong relationship between diet and disease, there is a paradigm shift to disease prevention through dietary intervention. The current market for cholesterol lowering nutritional product ingredients is over \$420 million globally, and growing as the population ages.

Cevena Bioproducts Inc. is the newly established manufacturer and supplier of Viscofiber™, the highest quality grain beta-glucan product available on the market today. Beta-glucans are widely recognized as efficacious ingredients capable of reducing cholesterol. Cevena is targeting the dietary supplement and functional food markets.

Cevena's product line grew from proprietary technology developed by

founding scientists Drs. Thava Vasanthan and Feral Temelli from the Department of Agricultural, Food and Nutritional Science at the University of Alberta. The Research Services Office (RSO) at the University presented Foragen Technologies Management Inc. with the project. “There has been significant interest over the last decade in beta-glucans from grains, particularly their ability to lower cholesterol. Foragen was attracted specifically to Cevena because its proprietary technology overcomes the key hurdles for the broader use of beta-glucans in foods and supplements,” says Armand Lavoie, Foragen's VP for Western Canada.

Initial funding by Foragen, AVAC Ltd., the Alberta Barley Commission, and the Alberta Agricultural Research Institute provided a springboard to further develop the proprietary oat and barley fractionation process. “It is wonderful to see

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Cevena growing out of this strong base and showing great potential for the future,” says Temelli.

From this investment, and following strong encouragement from concept research as well as market, engineering and intellectual property assessments, Cevena Bioproducts Inc. was created. “We are pleased with the progress Cevena has made since our initial investment,” says Lavoie. “The team has remained on track and focused on the research and development that needs to be completed to move the company forward.”

Cevena President Kimmo Lucas, has extensive experience in the creation and start-up of natural health and pharmaceutical companies, with both large and small enterprises. Most recently Lucas was the President and CEO of CV Technologies (CVT), where he was instrumental in implementing a successful program to increase sales by moving product from niche retailers into the mass market. Prior to his appointment to CVT, Lucas spent a decade in the pharmaceutical industry. He used his strong leadership and team building skills to redevelop the Canadian pharmaceutical division of 3M. Lucas was also involved in the sales and marketing team for Aventis. His extensive experience and proven ability to create high-performing and successful teams will be instrumental to Cevena’s success.

Cevena currently has two employees working with a scientific team of 10 who conduct primary research through

contracts with the University of Alberta. Lucas will work with the R&D team to ensure that the development remains on track and on target. His mandate is to enable business development to proceed at full force. He will also be instrumental in raising the next round of financing and focusing the company on market success.

“Since joining Cevena in May 2003,” says Lucas, “I have been impressed with the hands-on involvement of our Board of Directors and their approach which brings together a variety of expertise, perspectives and networks. Their expertise, combined with the network of experts with whom they connect us, allows for the acceleration of our business well beyond what it ordinarily could.”

### *Cevena’s competitive advantage*

Cevena’s patented process produces a unique combination of high-concentration, high-viscosity and native form  $\beta$ -glucan from oat and barley sources. Viscofiber™ is unique. No other beta-glucan concentrate comes close to matching its viscosity. Viscosity is a key property in delivering health benefits. Viscofiber™ is available as either a 45% concentrate from oats or a 65% concentrate from barley. No other manufacturer offers a choice of beta-glucan from both oat and barley. Higher concentration results in more  $\beta$ -glucan per unit of weight and allows more flexibility in the final product form. In the dietary supplement industry, Viscofiber™ offers customers increased convenience with both high concentration and superior viscosity, fewer pills need to be taken. For customers in the functional food industry, Viscofiber™ provides

greater flexibility with product formulations. These characteristics are especially important where 0.75 to 3 grams of active ingredient must be delivered to receive the cholesterol-lowering benefit.

The US Food and Drug Administration (FDA) and industry recognize that viscosity is a major factor in  $\beta$ -glucan’s ability to lower cholesterol. Significant research into the physiological effects of beta-glucan has shown that viscosity (thickness) and concentration (purity) are important to achieve the cholesterol-lowering benefit. Only one competitor on the market today offers a concentration comparable to Cevena. However, Viscofiber™ is 15-20 times more viscous and up to 20% more concentrated than the competing product.

Cevena is on track to become a processor of high-value nutrition and health ingredients from Canadian crops. “Cevena represents a clear example of the kinds of exciting opportunities that exist in Alberta’s growing Bioproducts industry,” says Ross Bricker, Vice President, Investment for AVAC Ltd. We can make good ideas grow to become winning companies. The secret is to take advantage of strong technologies. In support of development we offer a good university-based science infrastructure, access to smart seed stage investment and support for a focused management approach.

Cevena will be raising more capital this year. These funds will allow them to launch their current

The logo for 'foragen' features the word in a lowercase, sans-serif font. A green curved line arches over the letters 'o', 'r', and 'a', ending above the 'n'.

products into the market, continue development of products for other applications, and provide the working capital for the business to continue to grow and prosper. With its strong scientific and

management teams and the support it receives from its investors and advisors, Cevena will continue to take a leadership role in the research, development, and marketing of value-added crop-based ingredients.

Cevena's Web site is under construction. For additional information on recent events, go to [www.newportsummit.com/2003attendees.html](http://www.newportsummit.com/2003attendees.html) and [www.mymailout.com/mymailout/do/news/view?id=978](http://www.mymailout.com/mymailout/do/news/view?id=978)

## Masters Program Addresses Business Needs

The University of Toronto at Mississauga has put in place a Masters of Biotechnology Program. The 2-year program is designed to help fill a need in the biosciences and biotechnology sector - the training of science students with increased business skills.

The program grows out of the foresight of key people on the campus. Drs. Paul A. Horgan and Ulrich Krull were instrumental in making this happen. Dr. Horgan is now Director of the program and Dr. Krull is the Astra Zeneca Chair in Biotechnology. Horgan says, "Our program will support the needs of an expanding global biotechnology industry that requires scientists with sound business knowledge."

The students in the M.Biotech program come from a wide and varied background, but share the common goal of a career in biotechnology. Krull, who does research and teaches on campus, says; "We will prepare our graduates to be the future leaders in the industry. They will be highly educated in the latest scientific approaches, and have a firm understanding of the commercial context of biotechnology and how the industry relates to society."



*From left to right:  
Katie Worthington, Betsy Hui,  
Robert Urbanic, and Yousuf Naqvi.*

The program goals are comprehensive: to provide postgraduate education to qualified students in preparation for a career in biotechnology or pharmaceutical industries, to offer a firm grounding in the science of biotechnology, and to provide an introduction to the management of biotechnological organizations.

To ensure that the program remains responsive to the needs of students and industry, the program works with an advisory group with a strong industry component. Advisors have expertise in one or more areas including genomics, pharmaceuticals, agriculture, and venture capital. Foragen is particularly pleased to report that Dr. Murray McLaughlin, President and CEO of Foragen, is one of these advisors and a sector lecturer

on agricultural biotechnology and company creation.

The faculty for the M.Biotech program is drawn from a range of disciplines, including botany, chemistry and zoology. Members of the University of Toronto's Mississauga Management team and professors with the Rotman School of Management are also on the faculty. In addition to McLaughlin, there are a number of special lecturers who are leaders in industry and government agencies.

The M. Biotech Program took in its third set of students this fall. The entrance standards are challenging, and the placement success rate on graduation is very high, showing that this successful university program is meeting industry needs.

The program is thorough. Companies that participate in the co-operative education program or hire program graduates can expect candidates with organizational management skills, laboratory training in genetics and molecular biology and in protein chemistry, skills in theory and data interpretation and analysis, and awareness of industry issues.

  
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Foragen is a proud participant in the M.Biotech program. In addition to having representation on the advisory board, the company accepts students from the program for the co-op placement. "After all," says McLaughlin, "it is this type of

program and the outstanding students it attracts that will help create our future leaders. We have had many positive experiences with M. Biotech students. I would encourage the biotech industry to become involved."

For more information on the program, visit [www.erin.utoronto.ca/mbiotech](http://www.erin.utoronto.ca/mbiotech)

## President's Message

### Interesting Times



*Dr. Murray McLaughlin PhD, P.Ag.*

We have all heard of the ancient Chinese curse - "may you live in interesting times." I don't believe that we are cursed, but there is no doubt these are interesting times for the agriculture and agri-food industry.

The agri-food industry is moving into an important transition phase. There are powerful influences at work driving convergence from the farm gate to the consumer: from food as fuel to food as a wellness product; from plant breeding to genomics management; from animal health

to animal wellness and from food quality to food security. Under this shifting of perspective, opportunities and issues have evolved from matters of regional concern to matters of global relevance. This changes dynamics for new companies as they develop through the idea phase to the realization of potential commercial opportunities.

As we begin 2004, we are well into the new century, one in which our new Prime Minister Paul Martin has stated, "*Ideas and discovery are the currency of the 21st Century.*"

At Foragen we are committed to capitalizing on ideas that will create highly profitable companies in the agriculture and agri-food sector. To date we have helped create 10 new businesses. In our first 4 issues of "Visions" we wrote about **MCN BioProducts Inc., Pyxis Genomics Inc, PerOs Systems Technologies Inc.** and **Chromatin Inc.**, four companies that are continuing to develop their

technologies toward commercial opportunities.

Over the next ten years we will see a continual transition of this industry. There are lots of ideas and discovery going on. As we say in the Foragen business plan - "Ideas to Grow the Future."

In this issue we are highlighting **Cevena Bioproducts Inc.**, a company working with beta glucan derived from cereals (barley and oats) to generate products for the nutraceutical market. Cevena founders and management team have identified a growth sector of the agri-food industry and are capturing the strategic value of an industry in a state of transition.

Interesting times, yes, and times that will only get more interesting for the agriculture and agri-food sector.

The Foragen logo features the word "foragen" in a lowercase, sans-serif font. A green curved line arches over the letters "o" and "r", extending from the top of the "o" to the top of the "n".

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# Foragen: Model of a Private-Public Partnership

**Louis A. Guilbault, Ph.D.**  
*Vice-President, Scientific Affairs*  
*SGF Soquia inc.*

Just over three years ago, two crown corporations, SGF Soquia in Québec and Saskatchewan's Crown Investment Corporation, opted to team with RBC Technology, a Royal Bank of Canada subsidiary, in launching Gestion Foragen Technologies inc. The venture originally brought together two partners with different objectives but has since come to represent a model partnership between the private and public sectors with regard to investment in leading-edge technologies in the bio-food industry.

At the time, bio-food technology was experiencing dramatic growth in Quebec, and SGF Soquia sought to explore the many possibilities offered by advanced technologies in the industry. However, investment in business pre-startups or startups involving unproven technologies can be extremely risky. SGF Soquia was aware of this risk and decided to become involved in an initiative launched by RBC Technology for investments of this type while also partnering with Foragen, a pan-Canadian venture capital fund specializing in the establishment of new leading-edge technology-based bio-food companies.

How could the provincial development objectives of a partner such as SGF Soquia be reconciled with the objectives of a private company such as RBC Technology, which are focused on higher yields and have no geographical boundaries? For one, we were confident that the quality of research in Québec's bio-food industry would automatically attract a significant share of Foragen's



investment funds to the province. Moreover, RBC Technology could count on SGF Soquia's presence as a strategic partner because it was well established in Quebec with excellent contacts in both the bio-food industry and research centres. Finally, partnership with a private sector company such as RBC Technology would limit the risk of loss of control due to scattering of capital among companies whose value could be overestimated regardless of their geographical location.

By investing in Foragen, SGF Soquia gained a powerful analysis and performance tool equipped to meet the needs of companies reaching the precommercialization stage with advanced bio-food technologies. The Foragen business model facilitates the early acquisition of significant financing required for technology startups. More importantly, Foragen provides effective management guidance to companies throughout the value creation process and maintains access to an international network of contacts that complements that of SGF Soquia. These unique characteristics provide added value for SGF Soquia by enabling greater value creation for companies while reducing risk, so that companies are effectively positioned for subsequent rounds of funding, particularly by the private sector.

The outcome for SGF Soquia was in line with expectations. Since its founding, Foragen has made four investments in Quebec companies specializing in bio-pesticide development, oral fish vaccination, production of bio-pharmaceuticals through animal transgenesis and enrichment of the biomass. Besides direct investment in Quebec and local job creation, Foragen's involvement offers a number of additional benefits to SGF Soquia and Québec. For example, through Foragen we enhance our access to advanced bio-food technologies developed outside of the province. Business negotiations under the auspices of the network are already underway between companies in Quebec and technology firms outside of the province. Some of Foragen's investments in the United States were transacted in syndication with private U.S. investors, promoting good relations with these foreign investors and maximizing the appeal of our Quebec-based companies to them. Finally, we believe that the excellence of the technologies developed in Québec and creation of leading-edge companies will help to strengthen the bio-food industry and attract investment from major multinationals.

In a context in which there is a will to phase out public sector involvement in venture capital and increase private sector involvement, Foragen represents an ideal model of private-public partnership. Murray McLaughlin and his team have successfully dealt with the requirements and constraints imposed on them by partners with diverging objectives. Our congratulations to Foragen and best wishes in their ongoing pursuit of their venture.



# Notables

## PEOPLE

**Dr. Ashley O'Sullivan**, a former board member of Foragen Technologies, has become the third President of Ag-West Biotech in Saskatoon. O'Sullivan has held several positions within AAFC's Research Branch including international postings. The Foragen team looks forward to working with him as he brings new focus to advanced agricultural technology activities in Saskatchewan.

For more information see [www.agwest.sk.ca](http://www.agwest.sk.ca)

**Dr. Lorne Babiuk** of the Foragen Scientific Advisory Team was chosen by the Canadian Animal Health Institute to receive its Industry Leadership Award in recognition for a 30-year commitment to animal health. Babiuk serves as Director of the Vaccine and Infectious Disease Organization (VIDO) in Saskatoon<sup>1</sup>. The CAHI award is presented annually to an individual or association demonstrating a strong commitment to and leadership in the field of animal health. CAHI is the trade association representing companies that develop and manufacture animal health products in Canada.

See [www.usask.ca/vido](http://www.usask.ca/vido)  
The Canadian Animal Health Institute web site is [www.cahi-icsa.ca](http://www.cahi-icsa.ca)

<sup>1</sup> See Visions Vol.1 Issue 2 for information on a collaborative project involving Foragen investee Pyxis Genomics Inc. The project investigates Functional Pathogenomics of Mucosal Immunity (FPMI).

*Foragen is pleased to welcome two new interns for 2004.*

**Ms Jamie Patmore** is a Research Analyst Intern with Foragen Technologies in Saskatoon, Saskatchewan. She is a participant in WestLink's Technology Commercialization Internship Program. Westlink encourages the advancement of technology commercialization and management skills in Western Canada.

Patmore can be reached by email at [jamie.patmore@foragen.com](mailto:jamie.patmore@foragen.com) or Tel: (306)-651-1068. For more information on Westlink see Visions 1.4 or visit <http://www.westlink.ca>

**Mr. Paul Stewart**, MSc. is doing his internship as a Research Analyst with Foragen Technologies in Montreal, Quebec. He comes to Foragen from the NT Internship Program, a project of the Genesis Group Inc. The internship is designed to train technology development managers for the academic, private and public sectors in the region. Genesis Group is the commercialisation arm of the Memorial University of Newfoundland

Stewart can be reached at [paul.stewart@foragen.com](mailto:paul.stewart@foragen.com), or by phone at (514)-608-4859. For more on the Genesis Group visit [www.genesis.mun.ca](http://www.genesis.mun.ca)

## COMPANIES

**Pyxis Genomics Inc.**, a Foragen Investment Company, has signed a Research Agreement with Helix BioMedex on Non-Antibiotic Peptides. Under this collaborative research agreement, Pyxis will screen and identify bioactive peptides from Helix's peptide library using Pyxis proprietary micro array technology. Pyxis' intention is to license selected peptides from the Helix library and develop animal health therapeutics including non-antibiotic feed supplements for livestock and nutraceuticals for pets. These peptides would have the advantage of being an antibiotic alternative with the additional benefit of stimulating innate immunity.

To learn more about these companies, visit their respective websites are: [www.pyxisgenomics.ca](http://www.pyxisgenomics.ca), and [www.helixbiomedix.com](http://www.helixbiomedix.com)



## THE FORAGEN TEAM

In addition to our 5 full time employees, Foragen has a strong Board and Science Advisory Team, along with interns that work with our three regions. - In this issue I am pleased to identify our Board of Directors' and Science Advisory Team. You will hear from them in future issues of Visions.



*Dr. Murray McLaughlin PhD, P.Ag.*



*Dr. David Gauthier PhD, MBA*



*Roger Laurent Bernier, Ph.D., P.Ag.*



*Armand Lavoie MBA; P.Ag.*

## FORAGEN BOARD OF DIRECTORS'

A strong part of our team, providing advice and guidance on governance, investments, and strategy.

**Susan Smith**, RBC Ventures Inc., Ontario

**René Douville**, RBC Ventures Inc., Ontario

**John Oliver**, Maple Leaf Bio-Concepts

**Zach Douglas**, Crown Investments Corporation, Saskatchewan

**Shelley Legin**, Crown Investments Corporation, Saskatchewan

**Maurice Delage**, Delage Farms Inc., Saskatchewan

**Michel Charlebois**, SGF-SOQUIA, Quebec

**Bertrand Venne**, SGF-SOQUIA, Quebec

**Jacques Goulet**, Ph.D., Laval University, Quebec

## SCIENCE ADVISORY TEAM (SAT)

A critical part of our Foragen Team providing directional advice on areas of the agri-food sector that will create future opportunities, contacts for existing investments, and strategic input into our present portfolio.

**Dr. Larry Milligan**, Professor, University of Guelph

**Dr. Alan Wildeman**, V.P. Research, University of Guelph

**Dr. Ralph Hardy**, President, NABC (National Agriculture Biotech Council)

**Dr. Deborah Buszard**, Dean, MacDonald College, McGill University

**Dr. Lorne Babiuk**, Executive Director, VIDO (Vaccine and Infectious Disease Organization)

**Dr. Wilf Keller**, Director, NRC -Plant Biotechnology Institute

**Dr. Roger Wyse**, Burrill and Company

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