

Connecting the Pieces



January 2014

Welcome to the SCI E-Update!

Welcome to the official update of the Specialty Chemical Ingredients Initiative (SCI), a unique government-industry collaborative business development cluster focused specifically on the development and commercialization of high-value innovative products and sustainable specialty chemicals from renewable biomass. SCI operates within the Bio-Industrial Opportunities Branch of Alberta's Ministry of Agriculture and Rural Development as part of an effort to facilitate growth of high-value non-food products and ingredients from agriculture.

Inside SCI E-Update:

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- Highlight World Congress 2013
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Our SPOTLIGHT is ON

BioAlberta

www.bioalberta.com

The Specialty Chemical Ingredients (SCI) Initiative is pleased to spotlight BioAlberta – the Association for Life Sciences Industry.



Amanda Stadel, President BioAlberta

BioAlberta is the central voice and organizing hub for the life sciences industry in Alberta. It is a private, not-for-profit industry association representing the growing sector. Their vision is for a thriving and globally competitive Life Sciences industry that fuels key sectors of Alberta's economy. The organization has provided leadership to diverse stakeholders in the biotechnology industry through a variety of focused activities intended to promote and enable life science development in Alberta.



INDUSTRIAL



SPECIALTY



BioAlberta activities are focused in three key strategic areas:

- Advocacy
- Promotion, Marketing & Networking
- Industry Development

The association provides attentive, proactive and timely services and programs to over 140 members. Whether it is cost savings of a purchasing program, a marketing campaign, a publication, an educational session, or an advocacy project, BioAlberta expands its member companies' dollars and reach. As the provider of valuable marketing, networking, education, and information services, BioAlberta actively contributes to the success of individual companies and, ultimately, to the growth of the Alberta life sciences industry as a whole.



BioAlberta Active in the Specialty Chemical Sector

BioAlberta's annual publication, *BIOZINE* 2013, has a feature article, *It's a beautiful thing- demand for natural cosmetics is nourishing Alberta's specialty chemicals industry*, with focus on BioAlberta members, Ceapro Inc., Radiant Technologies Inc. and Taiga Bioactives Inc. *BIOZINE* is distributed internationally and has been a tremendous vehicle to promote Alberta's specialty chemical initiative.

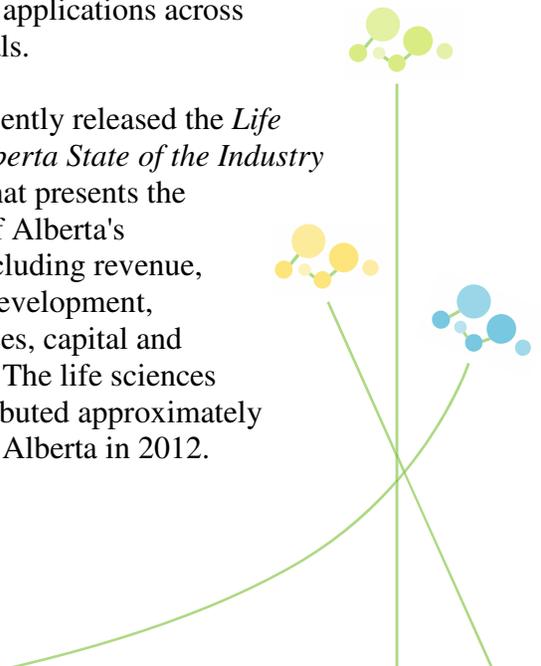
For the full *BIOZINE*:

<http://www.bioalberta.com/content/biozine-2013>

Alberta's Life Sciences Landscape

The future for Alberta's life sciences industry remains bright and this growing sector is one that is recognized as being significant in advancing new solutions that will improve the overall well-being of Albertans and citizens globally. Alberta has a strong diversified life sciences industry with companies across many sub-sectors including: human therapeutics, medical devices, ag-biotech companies, industrial biotechnology, natural health products & nutraceuticals, environmental, service companies and companies using biotechnology applications across various verticals.

BioAlberta recently released the *Life Sciences in Alberta State of the Industry 2013 Report* that presents the current state of Alberta's bioindustry including revenue, research and development, human resources, capital and current issues. The life sciences industry contributed approximately 14,100 jobs in Alberta in 2012.



For the full report visit:

<http://www.bioalberta.com/content/state-industry-report-2013>

Benefit with BioAlberta

BioAlberta is pleased to support the specialty chemical sector and their goal is to continue to build membership in this sector. As a member, you become part of a community of over 140 like-minded entities that share enthusiasm and commitment for life sciences. It is due to the ongoing involvement, collaboration and support of their members, partners and sponsors, that, over the last 15 years, they have grown to be a strong voice for life sciences industry in Alberta.

If you are interested in learning more about BioAlberta membership please do not hesitate to contact:

Amanda Stadel –President BioAlberta:

Amanda@bioalberta.com

Heather Pontikes - Events and Membership Manager BioAlberta:

heather@bioalberta.com

Website: www.bioalberta.com

SCI & Alberta Bio-Economy Highlighted at World Congress in Montreal in June

Kathy Lowther, SCI Initiative Lead, was invited to present and lead a panel at the BIO World Congress on Industrial Biotechnology and BioProcessing in June 2013 in Montreal. The *'Advances in Specialty Chemicals and Industrial Enzymes Destined for Food Ingredients, Cosmetics and Personal Care Sectors'* panel included five international participants: Kathy Lowther, SCI, Alberta; Neil Burns, P2Science, US; Albert Soley, Lipotec, Spain; Neil Goldsmith, Evolva, Switzerland

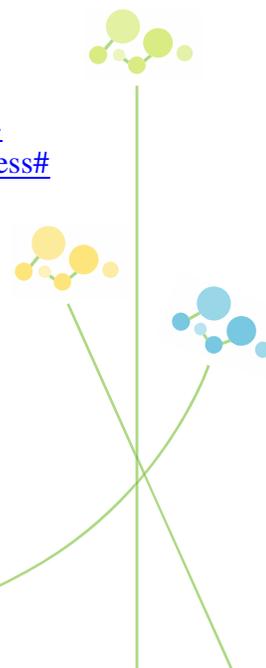
and Anthony Pavel, General Counsel of the Enzyme Technical Association (ETA), US.



Kathy (pictured above) provided an overview of Alberta's Specialty Chemical Ingredient (SCI) Initiative, Alberta's Bio-Economy and how the province will be joining this ever growing market.

See BIOtechNOW article link highlighting her presentation and the panel:

<http://www.biotech-now.org/environmental-industrial/2013/06/advances-in-specialty-chemicals-and-industrial-enzymes-shine-at-bio-world-congress#>



SCI Strategic Industry Advisor's Event

The SCI's 'by invitation' event held on November 5, 2013 in Calgary was well attended as always. A mix of informative and interesting presentations combined with time to network and connect with others in this industry created lots of energy, ideas and new collaborative opportunities. Our expert panel of speakers included:

Yves Lanctôt, Cosmetic Chemist and Formulator, Consultant Yves Lanctôt Inc., Montreal QC
<http://www.ylanctot.com/en/index.html>

Yves provided an excellent overview of trends, innovations, opportunities and challenges for the natural cosmetic and personal care ingredients industry. He talked about the need to clearly understand the market (country/region), the associated industry standards, certification, regulations, ingredient availability and pricing to determine what is possible before heading into formulation and product development. Compared to 10 years ago, today there are many good, high performance active molecules and ingredients available for formulation from across the globe, although there are still a few challenges such as natural preservatives. The biggest challenge facing industry is the lack of agreement on definitions and the plethora of industry standards/certification/seals, ranging from natural, plant derived, fair trade, organic to carbon and sustainability footprints and measures.

Dr. Jill Hagel & Dr. Peter Facchini
Department of Biological Sciences,
University of Calgary
<http://bio.ucalgary.ca/contact/faculty/facchini.html>

Dr. Jill Hagel provided an overview of their Biosynthesis/Synthetic Biology research program and platform technology development. The project is aimed at understanding the biochemistry, molecular and cellular biology and physiology of metabolic pathways of medicinal plants such as opium poppy and others. Plants contain specialized enzymes encoded by their unique genes that make them effective producers of medicines, flavours, fragrances, pigment, insecticides and other chemicals. Hagel and Facchini and their collaborators have discovered the genetic code and metabolic pathways of several valuable plants. Having access to such genetic information is a critical aspect of research that targets the development of synthetic biology tools and technologies to re-create plant specialized pathways in microbes such as yeast. The commercial production in scalable fermentation systems of currently plant-derived compounds, such as morphine, codeine, or flavor/fragrance molecules, could revolutionize chemical manufacturing practices.



Steve Colwell, (pictured above),
Technical Director, Norwood
Packaging Ltd, Richmond BC, and
Lead on the Launch of SCC Cascadia
Email: scccascadia@hotmail.com

The Society of Cosmetic Chemists (SCC) is dedicated to the advancement of cosmetic science and provides forums for the exchange of ideas and new developments in cosmetic research and technology. For professionals involved in specialty chemicals/cosmetics and personal care industry in western Canada, the closest chapters are Ontario, Quebec or California. Steve is leading an initiative to try to launch a new local chapter, SCC Cascadia, for Western Canada/NW US States. He is reaching out to everyone across the broad spectrum of the personal care products industry - from raw material or packaging suppliers, contract manufacturers, product brand owners, technical service fields to researchers and business development to gain support. A new local chapter will provide a forum for industry contacts for learning and networking opportunities and strengthen the growing industry in this region. A minimum of 25 candidates are required to form a local chapter.

If you are interested in joining this new group, or are currently a SCC member of a "faraway chapter", please send Steve an email: scccascadia@hotmail.com

4th Annual BCN Strategic Retreat - "Breaking Ground in Alberta's Bioindustry"

The BCN (Biorefining Conversions Network) event brings together international and regional leaders from industry, finance, academia, and government to share insights on the current state and future prospects of Alberta's bioindustrial sector. BCN notes that today, over 2,000 companies in the US and Canada manufacture or distribute over 20,000 biobased products. OECD

(Organisation for Economic Co-operation and Development) and the World Economic Forum expect the bioindustrial and sustainable-chemical industries to exceed \$1 trillion worldwide by the end of the decade. (http://www3.weforum.org/docs/WEF_FutureIndustrialBiorefineries_Report_2010.pdf).

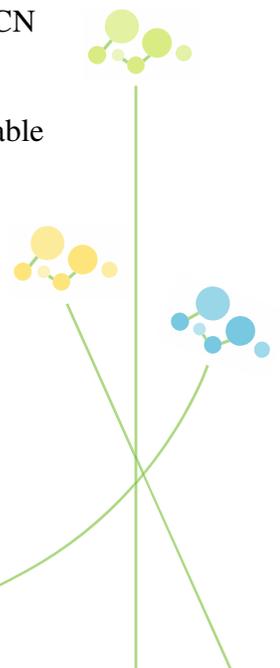
These emerging global bioindustrial markets are well-aligned with economic opportunities and business needs of Alberta's resource-based industry (RBI) sectors which drive over 60% of provincial GDP.

Presenters highlighted value-added products and enhanced environmental performance that cross the blurring interfaces between forestry, agriculture, energy, petrochemicals, mining, environmental engineering and bioindustrial technologies. Other participants profiled BCN's unique industrial-academic collaborations that are addressing current industry needs and building on the potential for bioindustrial development in Alberta.

As collaborating partners on the BCN program, SCI arranged for two international invited speakers for the program, including Stephan Herrera, Evolva and Dr. Patrick Foley, P2Science. Many successful and open business to business meetings, introductions and collaborative exchanges took place during the BCN event.

More information on BCN is available at:

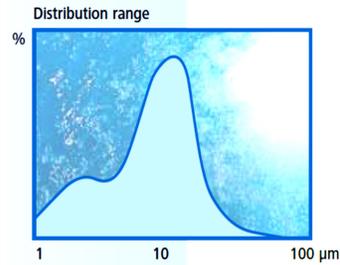
<http://www.bcn.ualberta.ca/>



New Equipment at Agri-Food Discovery Place - IKA MK 2000 Colloid Mill



A new piece of equipment, the IKA MK 2000 Colloid Mill, is now available at Agri-Food Discovery Place (AFDP) in Edmonton. A Colloid Mill is commonly used for corn ethanol to reduce the particle size of starch under wet status before sugar production; as the “right size” starch will generate more ethanol from the same amount of corn. A Colloid Mill can also be used for dispersing, homogenizing, emulsifying, mixing, stirring, and wet milling for grains, oil seeds, fiber etc. The MK 2000 is a high-performance inline colloid mill especially suitable for the production of colloidal solutions or extremely fine emulsions and suspensions. Excellent dispersing performance allows the IKA Colloid Mill MK 2000 to be used for continuous processes, providing a narrow distribution range of ground particles in a single pass. Working is possible with pressures up to 16 bar and temperatures of up to an average of 120°C. In case of higher viscosities a preceding positive displacement pump may be used.



Potential applications include:

- Colloidal solutions
- Micro-suspensions
- Incorporation of pigments/ingredients
- Dispersing/Homogenizing/Mixing
- Emulsifying (Mustard, Ointments, Mayonnaise)
- Wet milling (size reduction: 10-100µm)
- Micro encapsulation
- Coating masses

For more information contact:

Ruoxi Wang, MSc.

Project Support Technologist

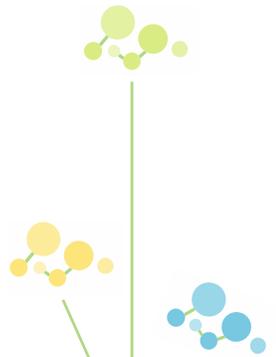
Bio-Industrial Opportunities Branch

Agri-Food Discovery Place, Building F-83,
6020-118 street

Edmonton, Alberta T6G 2E1 Canada

Cell: 780-716-1292 Office: 780-644-8123

ruoxi.wang@gov.ab.ca



Funding Programs

Genome Canada Genomic Applications Partnership Program (GAPP)

www.genomecanada.ca/en/portfolio/research/genomic-applications-partnership-program.aspx

In June 2013, Genome Canada launched the 'Genomic Applications Partnership Program' (GAPP) whose goal is to build partnerships between industry and Canadian academics to promote the use of genomics to solve user challenges. The program lessens the risk of industry investment and should provide incentive for follow-on investment from other partners. Ultimately, completed projects are expected to result in socioeconomic benefit to Canadians.

An important consideration for potential applicants is the term 'genomics'. Here, it refers not only to the study and use of DNA but also includes the RNA, proteins, and metabolites of organisms.

All industry sectors are being addressed and they are hoping to receive a variety of project topics from tailings pond remediation, to metabolomics-based testing methods, to biological sourcing of specialty chemicals. A notable difference between this program and traditional Genome Canada programs is that the focus is on later stage research, where there is potential for the research to bring to market a product, process, or policy change.

There is \$30 million available nationally for projects as small as \$300,000 and as large as \$6 million. Genome Canada's contributions must be leveraged by a 2:1 ratio from industry or other partners. One benefit for industry contributions is that most in-kind expenses are eligible such as salaries, equipment, and consumables.

Like the popular television show Dragon's Den, applicants will have to pitch their idea and provide a proposal modelled after a business plan. Expert reviewers will decide which projects would provide the highest return on investment not only in terms of revenues but also in social benefits to Canada.

The program is now going into its third round – Expressions of Interest are accepted on a rolling intake and Final Proposals will be due in early April 2014. More information on the application process and timelines is available:

www.genomecanada.ca/en/portfolio/research/genomic-applications-partnership-program.aspx

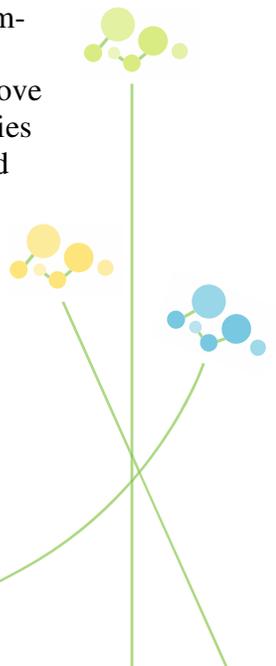
Genome Alberta Contact Information
Gijs van Rooijen, Chief Scientific Officer,
vanrooijen@genomealberta.ca
Adrianna Clapp, Program Coordinator,
aclapp@genomealberta.ca
Amy Noel, Program Coordinator,
anoel@genomealberta.ca

Western Innovation (WINN) Initiative

WINN is a \$100 million, five-year federal initiative that offers repayable contributions for small- and medium-sized enterprises (SMEs) with operations in Western Canada to move their new and innovative technologies from the later stages of research and development to the marketplace.

More information is available at:

<http://www.wd-deo.gc.ca/eng/14857.asp>



Alberta Innovation Voucher Program

The Alberta Innovation Vouchers Program, managed by Alberta Innovates Technology Futures, helps small early-stage technology and knowledge-driven businesses in Alberta get their ideas and products to market faster. The program assists pre- or low-revenue Alberta companies that are in the concept and formation stages of their business and helps to facilitate their movement into the growth stage, preparing them for success. Companies can apply for vouchers worth up to \$15,000 or \$50,000 to be used with a service provider for business and technology development services. The 2014 deadlines are at 4:00pm MST January 2, April 1st, July 1st and October 1st. More information is available at:

<http://www.albertatechfutures.ca/CapacityBuildingPrograms/IndustryFunding/AlbertaInnovationVouchers.aspx>

New International Society of Phytocosmetic Science (ISPS)

<http://www.phytoessence.org/isps/>

SCI (Donna Fleury) has been invited to be a part of the 29 member International ISPS Scientific Committee (some other invited Canadian representatives include Connie Kehler, CHSNC and Professor Alain Cuerrier of University of Montreal). The International Society for Phytocosmetic Science (ISPS) is a nonprofit, worldwide professional society comprised of individuals and institutions engaged in the science and application of using plants in production of cosmetic products. ISPS's mission is to promote research, education, training, and application of those technologies that use plants to provide safe, natural and healthy products. ISPS is open to

all researchers, practitioners, regulators, industry owners and interested and concerned individuals. ISPS aims to provide support and platforms for scientific collaborations in the field by producing annual events starting in May 2014.

Regulatory Update – Health Canada

Brief update from Health Canada on a pilot project for GMPs for APIs, for companies where this may be part of their product portfolio.

Notice to Stakeholders - Good Manufacturing Practices for Active Pharmaceutical Ingredients

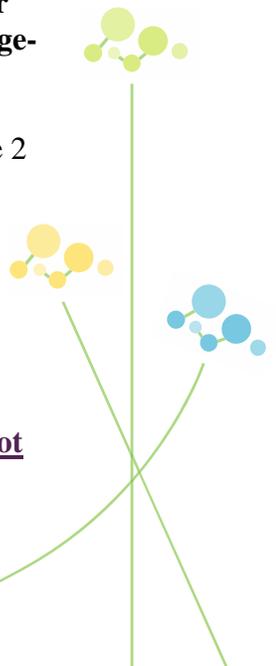
<http://www.hc-sc.gc.ca/dhp-mps/compliance/info-prod/drugs-drogues/actingred-notice-avis-pilot-eng.php>

November 2013

The Health Products and Food Branch Inspectorate is notifying stakeholders of a pilot project concerning the implementation of regulatory Good Manufacturing Practices (GMP) requirements for active pharmaceutical ingredients (API), which were published in Part II of the *Canada Gazette* on May 8, 2013 and which will come into force on November 8, 2013.

This pilot affects **importers of the following finished dosage-form products, and importers of API intended for use in the following finished dosage-form products:**

- Products falling under the **acne therapy monograph**, Table 2
- Products falling under the **anti-dandruff products monograph**, Table 2
- Products falling under the **antiseptic skin cleansers monograph**, Table 2
- Products falling under the **monograph for athletes foot**



- Products falling under the [treatments](#)
- Products falling under the [medicated skin care products monograph](#), Table 2
- Products falling under the [diaper rash products monograph](#), Table 2
- Products falling under the [sunscreen monograph](#), Table 2
- Products falling under the [monograph for throat lozenges](#)
- **Oral care (dentifrice/mouthwash) products** containing **triclosan** or a combination of **triclosan and fluoride** (product must meet specifications set out in its market authorization)
- **Oral care (dentifrice/mouthwash) products** containing **cetylpyridinium chloride** (product must meet specifications set out in its market authorization)

The products selected for this pilot were chosen on the basis of their respective safety and efficacy profiles. This pilot project arises in part from Health Canada's commitment, set out in the *Regulatory Impact Analysis Statement* accompanying the publication of the amended regulations in Part II of the *Canada Gazette*, to implement the new regulatory requirements in a manner which ensures that the administrative and compliance burden of the requirements is proportional to the quality risks presented by such products. It should be noted that importers of API who are unable to ascertain the intended use of that API (such that the API may end up being used in drugs other than the ones listed above) are not eligible to participate in this pilot project, as quality risk is predicated in part on the safety and efficacy profile of the finished dosage-form product.

Upcoming Events

Alberta

WEBINAR: The Bio-Industrial Opportunities Branch: Moving Towards a Sustainable Bioeconomy

When: February 5, 2014 @ 1:30 pm

Email: biobranch@gov.ab.ca

February 25, 2014

What's Next in Green Building?

Edmonton, Alberta

www.albertabiomaterials.com

International

January 16, 2014

Minnesota Green Chemistry 2014:

Connecting Policy, Tech & Economy

University of Minnesota Carlson School of Management, Minneapolis MN

www.greenchemistrymn.org/events/minnesota-green-chemistry-2014-connecting-policy-technology-and-economy

February 6-7, 2014

5th Annual Next Generation Bio-Based and Sustainable Chemicals Summit

San Diego AC

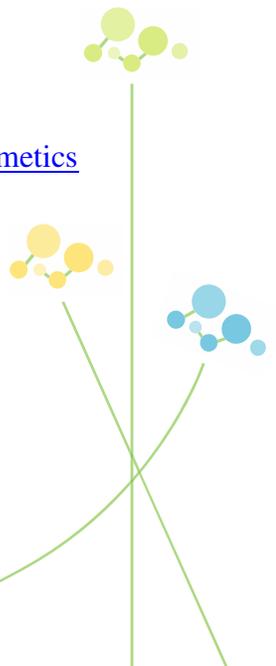
informationforecastnet.com/events/biobased14

February 20 - 21, 2014

American Conference Institute's: Legal, Regulatory and Compliance Forum on Cosmetics

The Carlton Hotel, New York, NY

www.americanconference.com/cosmetics



February 19-21, 2014

Personal Care and Homecare Ingredients Expo

Shanghai New International Expo Centre
www.pchi-china.com/en/

March 6 - 9, 2014

Anaheim Convention Centre
Natural Products Expo West

www.expowest.com

Engredea

www.engredea.com

March 25 – 26, 2014

Making Cosmetics: Concept to Consumer

Ricoh Arena, Coventry, UK
www.making-cosmetics.com

March 25-27, 2014

Cleaning Products Europe 2014

Hilton Deansgate, Manchester, UK
www.cleaningproductseurope.com

April 1-3, 2014

in-cosmetics

Hamburg Messe, Hamburg Germany
www.in-cosmetics.com

May 13-14, 2014

NYSCC Suppliers Day

NJ Expo Centre, Edison, NJ
www.nyscc.org/suppliers-day

May 15 - 17, 2014

Organic Monitor's Sustainable Cosmetic Summit

New York, NY
www.sustainablecosmeticssummit.com

May 20-23, 2014

International Phytocosmetic Congress

Quito Ecuador
www.phytoessence.org/ipc2014

Happy New Year!

from the SCI Initiative

Co-Leads: Kathy Lowther & Donna Fleury

www.agriculture.alberta.ca/biobasedchemicals



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