

SPARK 2017
Connecting Innovators, Advancing Technology
Edmonton, Alberta
November 6 – 8, 2017

As of November 6, 2017

Monday, November 6, 2017

5:30 – 7:30pm Registration & Networking Reception
Riverview Room

Tuesday, November 7, 2017

7:00 – 8:15am Breakfast & Registration
Hall D & Hall Foyer

8:15 – 9:00am **Conference Opening / Welcome**
Hall D Steve MacDonald, Chief Executive Officer, Emissions Reduction Alberta (ERA)
 Laura Kilcrease, Chief Executive Officer, Alberta Innovates
 Remarks by The Honourable Deron Bilous, Alberta Minister of Economic Development and Trade

9:00 – 10:00am **Keynote Presentation - SEEING THROUGH COMPLEXITY: Innovating in a world under stress**
Hall D *What are the risks and opportunities that will affect how societies, communities, and companies innovate in coming years? The talk will pinpoint a set of linked large-scale stresses that will powerfully shape innovation pathways in the next decade—including climate change, the energy transition, rapid urbanization, chronic low growth, and political instability. It will also identify some likely areas of technological breakthrough that will create genuine and perhaps surprising opportunities for innovation.*

Moderator: Steve Price, Executive Director, Bioindustrial Innovation, Alberta Innovates
Thomas Homer-Dixon, Chairman, Global Systems, Balsillie School of International Affairs

10:00 – 10:30am Networking Break
Hall D & Hall Foyer

10:30 – 11:30am

Hall D

Plenary Panel – Where Money and Ideas Meet

Learn new, innovative funding approaches under development and how to leverage global efforts to fund clean tech in Alberta.

Moderator: Nick Parker, Chairman, Parker Venture Management Inc.

Kristina Williams, President and CEO, Alberta Enterprise Corp.

Tony Van Bommel, Senior Managing Partner, BDC Capital, Industrial, Clean and Energy Technology Fund

Lally Rementilla, Chief Financial Officer, Quantius

11:30am – 11:50am

Hall D

Remarks by Alberta Premier Rachel Notley

11:50am – 12:15pm

Hall D & Hall Foyer

Lunch

12:15 – 12:45pm

Hall D & Hall Foyer

Innovation Showcase

12:45 – 2:00pm

Breakout Session #1

STREAM A Salon 8	STREAM B Salon 9	STREAM C Salon 10	STREAM D Salon 11	STREAM E Salon 12
<p><u>1.1– Technology Development to Measure and Enhance Sustainability in Biological Systems</u> <i>What technologies can be used to measure or enhance sustainable practices in biological systems?</i></p> <p><i>Moderator: Susan Wood-Bohm, President and CEO, Wood-Bohm and Associates</i></p> <p>David Layzell, Director,</p>	<p><u>2.1 – Finding The Sweet Spot for your Technology</u> <i>How do you find the right market/fit for a new technology? When is it time to change course?</i></p> <p><i>Moderator: Chris Reid, Director, Institute for Breakthrough Energy and Emission Technology (IBET)</i></p>	<p><u>3.1 – Financing and Funding Models to Advance Innovation</u> <i>How can innovators access funding to optimize and commercialize technology once it has been proven at the demonstration scale?</i></p> <p><i>Moderator: Bruce Edgelow, Managing Partner & Founder, EdgeMark Capital & Advisory Services Inc.</i></p>	<p><u>4.1 – Digital Solutions for Advancing Clean Technology</u> <i>Why data, sensors and other measurement are tools the next big thing in meeting GHG emission reduction and other environmental targets? How are they being applied?</i></p> <p><i>Moderator: John Brown, Assistant Deputy Minister, Economic Development and Trade, Government of Alberta</i></p>	<p><u>5.1 – Bioindustrial Development and Biological GHG Emissions</u> <i>Moderator: Gordon Giles, Program Director - Forestry, Alberta Innovates</i></p> <p>Next Generation of Landfill Diversion: Transforming Solid Waste into Zero-Carbon Oil using Hydrothermal Liquifaction <i>Presented by: Jerry Kristian, Co-Founder, NULIFE GreenTech</i></p>

<p>Canadian Energy Systems Analysis Research (CESAR) Initiative</p> <p>Cameron Carlyle, Assistant Professor, Faculty of Agricultural, Life & Environmental Sciences, Agricultural Food and Nutritional Science, University of Alberta</p> <p>Alison Sunstrum, CEO, GrowSafe Systems Ltd.</p>	<p>Denis Taschuk, President and CEO, Radient Technologies Inc.</p> <p>Zoe Kolbuc, Vice President, Patnerships, Sustainable Development Technology Canada (SDTC)</p> <p>Iggy Domagalski, CEO, Tundra Process Solutions</p>	<p>Nate Glubish, Investment Manager, Yaletown</p> <p>Marty Reed, CEO, Evok Innovations</p> <p>Terry Freeman, Head of Investments, ATB Capital</p>	<p>Kevin Lo, Vice President, Pason Systems</p> <p>Remi Schmaltz, CEO, Decisive Farming Corp.</p> <p>Gandeephan Ganeshalingam, Chief Innovation Officer, GE Canada</p>	<p>Valorization of Biofuel Byproducts <i>Presented by:</i> Shawn Samborsky, Project Director, KBL Environmental Ltd.</p> <p>Canola Based Spray Foam insulation <i>Presented by:</i> Mehr Nikoo, Lead Process Engineer, Oleofoam Inc.</p> <p>Yield-based Nitrous Oxide Emissions as affected by Nitrogen Fertilization in Wheat: Application Timing and Fertilizer Types <i>Presented by:</i> Shakila Ekanayaka Mudiyansele, Graduate Student, Department of Renewable Resources, University of Alberta</p> <p>The Road to Carbon Neutral Beef – Large Scale Demonstration Pilot of the Clean Cow Compound <i>Presented by:</i> Tanya Maynes, Sustainability Specialist, Viresco Solutions</p>
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2:00 – 2:15pm

Short Break – Room Change

STREAM A Salon 8	STREAM B Salon 9	STREAM C Salon 10	STREAM D Salon 11	STREAM E Salon 12
<p><u>1.2 – What’s New in Biomaterials, Biochemicals and Bioenergy</u> <i>What are the new biomaterial, biochemical and bioenergy products and technologies, and how can they provide an environmental benefit?</i></p> <p><i>Moderator:</i> Warren Mabee, Associate Professor and Department Head of Geography, Queens University</p> <p>Jonathan Curtis, Scientific Director, Lipid Chemistry Group, University of Alberta</p> <p>Dan Madlung, President and CEO, BioComposites Group</p> <p>Bernhard Seifried, Senior Research Scientist, Ceapro Inc.</p>	<p><u>2.2 – Carbon Conversion Technologies and Opportunities for Alberta to Lead</u> <i>What are some of the leading carbon conversion technologies that will move us toward Alberta and world climate change goals? Where are the opportunities for researchers and innovators as Alberta advances development of these technologies?</i></p> <p><i>Moderator:</i> Mark Summers, Executive Director, Technology and Innovation at Emissions Reduction Alberta (ERA)</p> <p>Apoorv Sinha, CEO, Founder, Carbon Upcycling Technologies</p> <p>Harold Krenkel, Manager, Processing Technologies, InnoTech Alberta</p> <p>Issam Dairanieh, CEO, Global CO2 Initiatives</p> <p>Robert Niven, CEO & Founder, CarbonCure Technologies</p>	<p><u>3.2 – Governments as Customers for Innovations</u> <i>How can you target governments as a first market or first customer for new technology? What are governments looking for and where are the best opportunities?</i></p> <p><i>Moderator:</i> David Lynch, General Manager, Research and Development Enerkem</p> <p>Kevin Turner, Regional Director, Office of Small and Medium Enterprises, Western Region, Public Services and Procurement Canada (PSPC)</p> <p>Sandy Marshall, Executive Director, Bioindustrial Innovation Canada</p> <p>Mark Brostrom, Director, City Environmental Strategies, Economic and Environmental Sustainability,</p>	<p><u>4.2 – Jumping Over the Gaps and Barriers to Adopt New Technologies</u> <i>What are the pinch points or bottlenecks that slow the development and adoption of new technologies and what are the solutions?</i></p> <p><i>Moderator:</i> Rus Matichuk, Vice President, Rohit Capital, Rohit Group</p> <p>David Bressler, Professor, Agricultural, Life and Environmental Sciences Agricultural Food and Nutritional Science, University of Alberta</p> <p>Rebecca Boudreaux, President & Board Director, Oberon Fuels</p> <p>Stephen Kaufman, General Manager, External Innovation, Suncor</p>	<p><u>5.2 – Industrial Processes and Energy Efficiency</u> <i>Moderator:</i> David Van Den Assem, Manager, Kinetica, Innovate Calgary</p> <p>Robust Model Predictive Control of an Energy-efficient HVAC System <i>Presented by:</i> Mojtaba Hedaytpour, M.Sc. Student, Faculty of Engineering and Applied Science at University of Regina</p> <p>Conversion of Waste CO2 to Value Added Products Using Renewable Energy <i>Presented by:</i> Beatriz Molero-Sanchez, Postdoctoral Fellow, University of Calgary</p> <p>Effect of Acid Hydrolysis Reaction Conditions on CNC Isolation from Enzymes-treated Wood Pulp <i>Presented by:</i> Dawit Beyene, PhD Candidate, University of Alberta</p>

		<p>City of Edmonton</p> <p>Krista Berezowski, Executive Director, Alberta Infrastructure</p>		<p>Carbon UpCycling Technologies - Making CO2 Green <i>Presented by:</i> Greg Boser, Partners, ZeroCor Turblars</p> <p>EPI Refinery Cryostrip <i>Presented by:</i> Jose Lourenco, President, Expansion Power Inc.</p>
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3:30 – 4:00pm
Hall D & Hall Foyer

Networking Break

4:00 – 5:00pm
Hall D

Plenary Panel – What Does the Marketplace Want?

Discover what clean tech challenges are confronting Alberta’s biggest industry sectors and how the research and innovation community better understand and address market needs.

Moderator: Kathleen Sendall, Corporate Director, Enmax Corporation / Board Chair, Emissions Reduction Alberta
 Dan Wicklum, Chief Executive, Canada’s Oil Sands Innovation Alliance (COSIA)
 Michael Crothers, President and Canada Country Chair, Executive Vice President, Oil Sands, Shell Canada
 Brian Vaasjo, Chief Executive Officer, Capital Power

5:00 – 7:00pm
Hall D & Hall Foyer

Networking Reception & Innovation Showcase

Wednesday, November 8, 2017

7:00 – 8:15am
Hall D & Hall Foyer

Breakfast & Registration

8:15 – 8:45am
Hall D

Opening Remarks
Remarks by The Honourable Shannon Phillips, Alberta Minister of Environment and Parks and Minister Responsible for the Climate Change Office

8:45 – 9:45am
Hall D

Plenary Panel – Opportunities for Innovators Today and Tomorrow

Thought leaders will explore how Alberta can transition to a lower carbon future and the opportunities that exist for innovators who can help the province meet decarbonization goals.

*Moderator: Steve MacDonald, Chief Executive Officer, Emissions Reduction Alberta (ERA)
Lorraine Smith, Associate Director, Volans
Leo De Bever, Chairman, Nauticol Energy
Glen Murray, Executive Director, Pembina Institute*

9:45 – 10:15am
Hall D & Hall Foyer

Networking Break

10:15 – 11:30am

Breakout Session #3

STREAM A <i>Salon 8</i>	STREAM B <i>Salon 9</i>	STREAM C <i>Salon 10</i>	STREAM D <i>Salon 11</i>	STREAM E <i>Salon 12</i>
<p><u>1.3 – Biological Solutions for Transportation Products, Policy and the Future</u> <i>What are the policies or incentives that have been successful in encouraging a move to lower carbon transportation fuels?</i></p>	<p><u>2.3 – Exploring Solutions for Transforming the Power Grid</u> <i>What policy and technical barriers need to be addressed to transform Alberta’s power grid and maximize adoption of renewable energy and other technologies that can reduce GHG emissions? Where do co-firing technologies, material</i></p>	<p><u>3.3 – Policy Driving Innovation</u> <i>How is Alberta’s Climate Leadership Plan creating opportunities for complementary programs that support climate goals? What opportunities are there for innovators as a</i></p>	<p><u>4.3 – Building A Stronger Business</u> <i>Advancing innovative technology requires tremendous attention and sometimes the business side of your operations needs additional support. How do you know when it is time to bring in help from the outside?</i></p>	<p><u>5.3 – Reducing GHG Footprint from Fossil Fuels</u> <i>Moderator: John Zhou, Vice President, Clean Energy, Alberta Innovates</i></p> <p>Newly patented - In-Pipe Turbine Generator (IPTG) <i>Presented by: Zane Lozak, PZKO Oilfield Industries Inc.</i></p>

<p><i>Moderator:</i> Warren Mabee, Associate Professor and Department Head of Geography, Queens University</p> <p>Geoffrey Tauvette, Director, Fuel & Environment, WestJet</p> <p>Dawn Fenton, Director, Sustainability & Public Affairs, Volvo</p> <p>Jack Saddler, Task Leader, IEA Bioenergy Task 39, Liquid Biofuels, University of British Columbia</p>	<p><i>switching and co-gen fit into the electricity system? Where are the best opportunities for researchers and innovators?</i></p> <p><i>Moderator:</i> Heather Campbell, Procurement Development Manager, Alberta Electric System Operator (AESO)</p> <p>Kate Chisholm, Senior Vice President, Legal and External Relations, Capital Power</p> <p>Dan Chapman, Director, Business Development and Projects, NRStor Inc.</p>	<p><i>result of policy initiatives, like the oilsands GHG emissions limit and output-based allocations?</i></p> <p><i>Moderator:</i> Robert Savage, Assistant Deputy Minister, Climate Change Office, Government of Alberta</p> <p>Don Roberts, CEO, Nawitka Capital Advisors Ltd.</p> <p>Adrian Banica, EIR Business Development, TEC Edmonton</p> <p>Joy Romero, Vice President, Technology and Innovation, CNRL</p>	<p><i>How soon do you need to start looking for your first customer? How do you determine when it's time to start looking for funding?</i></p> <p><i>Moderator:</i> Jane Halford, Executive-in-Residence, TEC Edmonton</p> <p>Joe Martini, Director, GE Innovation Centre, Zone Startups Calgary</p> <p>James Szarko, President & CEO, Botaneco</p> <p>Tim Haig, CEO, Forge Hydrocarbons Corp.</p>	<p>Membrane Technology Assessment Program (MTAP) at NAIT's Centre for Oil Sands Sustainability <i>Presented by:</i> Hamed Mahdavi, Water Technology Development Engineer, NAIT</p> <p>Advanced Catalysis and Process for Green Chemicals Production <i>Presented by:</i> David Lynch, Research & Development Manager, Enerkem</p> <p>Demonstration of Near Zero Emission Well Control System <i>Presented by:</i> Calum Chisholm, CEO, SAFCell</p> <p>Myths of Collaboration <i>Presented by:</i> Bryan Helfenbaum, Manager, Technology, Devon Canada</p>
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11:30am – 12:00pm
Hall D & Hall Foyer

Lunch

12:00 – 12:45pm
Hall D & Hall Foyer

Innovation Showcase

STREAM A Salon 8	STREAM B Salon 9	STREAM C Salon 10	STREAM D Salon 11	STREAM E Salon 12
<p><u>1.4 – What’s Creating Biobuzz – Feedstocks and Conversion</u> <i>What are some of the leading technologies to address methane emissions and where are the best opportunities for Alberta’s innovators to advance technologies that will have a growing global market?</i></p> <p><i>Moderator:</i> Christine Murray, Director, Agricultural Technologies, Alberta Innovates</p> <p>Mike Kennedy, Vice President, Business Development, Green Analytics</p> <p>Paolo Mussone, Applied Bio/Nanotechnology Industrial Research Chair,</p>	<p><u>2.4 Exploring Cleantech Directions – State of the Industry in Alberta</u> <i>This panel of experts will share their views, perspectives and learnings from the latest survey results and their participation in the 2018 Cleantech Directions Report, which focuses on advancing innovation in Alberta.</i></p> <p><i>Moderator:</i> Lisa Wichmann, Publisher and Manager, Cleantech Canada</p> <p>Sheila Schindel, VP Sustainable Energy Solutions & Strategy, R.I.I. North America Inc.</p> <p>Kent Madsen, President, Madsen’s Custom Cabinets</p> <p>Susan Wood Bohm, President and CEO, Wood-</p>	<p><u>3.4 – Accessing Investments to Scale Up Technology in Canada’s Oil Sands</u> <i>Given the magnitude of investment required to scale up GHG-reducing technologies in Canada’s oil sands, how can researchers and innovators advance technologies for the sector? How can innovators de-risk technology for the oil sands? Why are some technologies able to attract investment and scale up?</i></p> <p><i>Moderator:</i> Dave Collyer, President, Collyer Business Consulting Inc.</p> <p>Joe Kuhach, CEO, Nsolv</p> <p>Craig Stenhouse, Manager, Canada's Oil Sands Innovation Alliance (COSIA), Cenovus Energy</p> <p>Juan Benitez, Executive Business Advisor, Alberta Innovates.</p>	<p><u>4.4 – Gaining Public Acceptance for New Technologies</u> <i>Innovation is not always readily accepted. What are some approaches companies have taken to garner public acceptance for new technologies or business practices they have developed or introduced?</i></p> <p><i>Moderator:</i> Vic Adamowicz, Professor, University of Alberta</p> <p>Judith Sayers, Board of Directors, Clean Energy BC</p> <p>Doug Beever, Senior Director, Sustainability & Stakeholder Relations, Agrium</p> <p>Veronica Bliska, Councillor, Municipal District of Peace No. 135</p>	<p><u>5.4 – Low-Emitting Electricity Supply</u> <i>Moderator:</i> Jeff Reading, Innovation Partnerships, ATCO</p> <p>Emissions Reduction Potential from Micro Combined Heat and Power <i>Presented by:</i> Imad Khaled, Senior Engineer, Research & Innovation, ATCO</p> <p>Development of LEAP-WEAP integrated model for assessment of water and GHG footprints for Power Generation Sector <i>Presented by:</i> Ankit Gupta, Student, University of Alberta</p> <p>Waste Heat Recovery Power Generation <i>Presented by:</i> Colin Duncan, Director of Business Development, Ormat Technologies Inc.</p> <p>The Future of Power Generation: Low temperature Thermoelectric</p>

<p>NAIT</p> <p>Kevin Vessey, Professor, Plant Biology, St. Mary's University</p>	<p>Bohm and Associates</p>	<p>Geoff Clark, Chief Executive Officer Acceleware Ltd.</p>	<p>Peter Boxall, Chair, Department of REES Agricultural Life and Environmental Sciences Resource Economics and Environmental Sociology, University of Alberta</p>	<p>Generation <i>Presented by:</i> Geoff Theuman, Business Development Associate, Phoenix Industrial</p> <p>Advancing Electric Vehicles in Edmonton. <i>Presented by:</i> Howaida Hassan, Senior Environment Project Manager, City of Edmonton</p>
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2:00 – 2:30pm
Hall D & Hall Foyer

Networking Break

2:30 – 3:30pm
Hall D

Plenary Panel – Advancing Innovation in Today’s World

This session will focus on solutions that have been effective in driving clean technology innovation around the world. You will learn how to apply lessons from other jurisdictions in order to find complete solutions that will advance technology more quickly in Alberta and Canada.

Moderator: Brenda Kenny, Vice Chair, Emissions Reduction Alberta (ERA)

Celine Bak, President, Analytica Advisors

Laura Kilcrease, Chief Executive Officer, Alberta Innovates

Oryssia Lennie, Board Chair, The Alberta Research and Innovation Advisory Committee (ARIAC)

3:30 – 3:45pm
Hall D

Closing