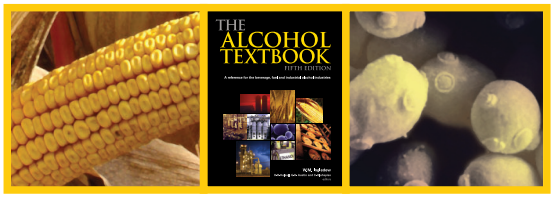
The Alcohol School 2016



Agenda

Montréal

InterContinental Montréal

September 11-16, 2016

ETHANOL TECHNOLOGY INSTITUTE

6120 West Douglas Avenue
Milwaukee, WI 53218 USA
800 583-6484 | 414 393-0410
Fax 414 358-8012
institute@ethanoltech.com
www.lbds.com

Ethanol Technology Institute Staff

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Scientific Director
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Administrative Director
nantoniades@lallemand.com

Liz Ward, Ph.D
Registration Coordinator
lward@lallemand.com

Hotel Information

InterContinental Montréal
360 rue St-Antoine Ouest
Montréal, Québec H2Y 3X4 Canada
514 987-9900
Fax 514 847-8730
https://resweb.passkey.com/go/AlcoholSchool2016

Montréal Information
Greater Montréal Convention and Tourism Bureau
www.tourism-montreal.org

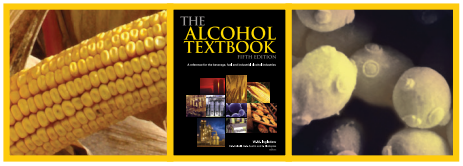
Facility Visits

Préfontaine Yeast Plant
Lallemand Inc.
1620 rue Préfontaine
Montréal, Québec H1W 2N8
Canada
514 522-2133
www.lallemand.com

National Research Council of Canada
6100 Royalmount
Montréal, Québec H4P 2R2
Canada
514 496-6100
www.nrc-cnrc.gc.ca/eng/

Diageo Global Supply
Valleyfield
1 rue Salaberry
Valleyfield, Québec J6T 2G9
Canada
450 373-3230
www.diageo.com

Éthanol GreenField Plant
GreenField Ethanol
3300 boulevard Marie-Victorin
Varennes, Québec J3X 1P7
Canada
450 652-1800
www.greenfieldethanol.com



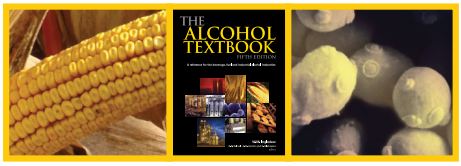
Sunday

SEPT 11, 2016

5:00 pm – 8:00 pm REGISTRATION AND WELCOME — Chez Plume Bistro

Once you've checked into the hotel, please come and find the Alcohol School staff at the Chez Plume Bistro (on the reception desk level across the bridge) anytime after 5 pm. You will have a chance to register for the school, have your picture taken (to later share with your classmates for networking purposes), put your school materials back in your room, and then join us for hors d'ouevres and an open bar to say hello to old and new friends and get the week off to a good start.

The Alcohol School 2016



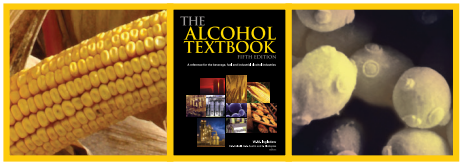
Monday

fuel alcohol session

SEPT 12, 2016

7:30 am – 8:30 am	REGISTRATION	SARAH BERNHARDT ROOM
8:30 am – 8:45 am	Welcome *Angus Ballard, Lallemand Biofuels & Distilled Spirits (USA)*	
8:45 am – 9:00 am	Introduction to the Agenda *Graeme Walker, Ethanol Technology Institute (Scotland)*	
9:00 am – 9:30 am	The Global Fuel Alcohol Industry *Craig Pilgrim, Lallemand Biofuels & Distilled Spirits (USA)*	
9:30 am – 10:00 am	The Global Distilled Spirits Industry *Steve Wright, Lallemand Biofuels & Distilled Spirits and Spiritech (Canada)*	
10:00 am – 10:30 am	COFFEE BREAK	
10:30 am – 11:10 am	Grain Receiving, Storage and Milling *Robert Piggot, Lallemand Biofuels & Distilled Spirits (Canada)*	
11:10 am – 11:50 am	Enzymes as Processing Aids in Alcohol Production *Kulinda Davis, SmartCook Energy (Kenya)*	
11:50 am – 12:00 pm	STRETCH/COMFORT BREAK	
12:00 pm – 12:30 pm	Maximising Starch Conversion to Ethanol *John Matthews, Novozymes (USA)*	
12:30 pm – 1:00 pm	Yield, Efficiency and Profitability in Alcohol Plants *Jack Swanson, Lallemand Biofuels & Distilled Spirits (USA)*	
1:00 pm – 2:00 pm	LUNCH	All Maisonneuve
2:00 pm – 2:45 pm	Feedstocks for Fuel Alcohol Production *Dale Monceaux, AdvanceBio LLC (USA)*	SARAH BERNHARDT ROOM
2:45 pm – 3:30 pm	Corn Grain for Ethanol production *Speaker to be confirmed*	
3:30 pm – 4:00 pm	COFFEE BREAK	
4:00 pm – 4:45 pm	Grain Mashing for Fuel Alcohol *Ben Sunderhaus, Lallemand Biofuels & Distilled Spirits (USA)*	
4:45 pm – 5:30 pm	Fractionation Technologies for Alcohol Production *Vijay Singh, University of Illinois (USA)*	

The Alcohol School 2016



Monday — beverage alcohol session — SEPT 12, 2016

7:30 am – 8:30 am	REGISTRATION	SARAH BERNHARDT ROOM
8:30 am – 8:45 am	Welcome *Angus Ballard, Lallemand Biofuels & Distilled Spirits (USA)*	
8:45 am – 9:00 am	Introduction to the Agenda *Graeme Walker, Ethanol Technology Institute (Scotland)*	
9:00 am – 9:30 am	The Global Fuel Alcohol Industry *Craig Pilgrim, Lallemand Biofuels & Distilled Spirits (USA)*	
9:30 am – 10:00 am	The Global Distilled Spirits Industry *Steve Wright, Lallemand Biofuels & Distilled Spirits and Spiritech (Canada)*	
10:00 am – 10:30 am	COFFEE BREAK	
10:30 am – 11:10 am	Grain Receiving, Storage and Milling *Robert Piggot, Lallemand Biofuels & Distilled Spirits (Canada)*	
11:10 am – 11:50 am	Enzymes as Processing Aids in Alcohol Production *Kulinda Davis, SmartCook Energy (Kenya)*	
11:50 am – 12:00 pm	STRETCH/COMFORT BREAK	
12:00 pm – 12:30 pm	Maximising Starch Conversion to Ethanol *John Matthews, Novozymes (USA)*	
12:30 pm – 1:00 pm	Yield, Efficiency and Profitability in Alcohol Plants *Jack Swanson, Lallemand Biofuels & Distilled Spirits (USA)*	
1:00 pm – 2:00 pm	LUNCH	All Maisonneuve
2:00 pm – 2:45 pm	Raw Materials for Beverage Alcohol Production *Douglas Murray, Diageo (Scotland)*	VIEUX-MONTRÉAL ROOM
2:45 pm – 3:30 pm	Mash Preparation in the Beverage Distilling Industry *Steve Wright, Lallemand Biofuels & Distilled Spirits and Spiritech (Canada)*	
3:30 pm – 4:00 pm	COFFEE BREAK	
4:00 pm – 4:45 pm	Rum Production *Shernell Layne, Lallemand Biofuels & Distilled Spirits (Barbados)*	
4:45 pm – 5:30 pm	Canadian Whisky Production & Aspects of Continuous Improvement *Martin Laberge, Diageo Global Supply (Canada)*	

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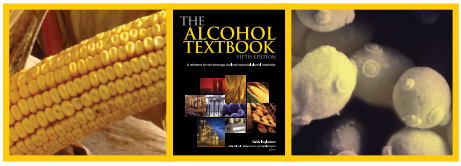

Tuesday — combined session — SEPT 13, 2016

8:30 am – 9:20 am	Sugar Feedstocks for Fuel and Beverage Alcohol *Jaime Finguerut, Centro de Tecnologia Canavieria, CTC (Brazil)*	SARAH BERNHARDT ROOM
9:20 am – 10:10 am	Current Challenges and New Opportunities in Alcohol Production *Vijay Singh, University of Illinois (USA)*	
10:10 am – 10:35 am	COFFEE BREAK	
10:35 am – 11:15 am	Physiology of Ethanol-Producing Yeasts *Graeme Walker, Ethanol Technology Institute (Scotland)*	
11:15 am – 11:55 am	Very High Gravity Alcohol Production in Industry *Mike Ingledew, Professor Emeritus, University of Saskatchewan (Canada)*	
11:55 am – 12:05 pm	STRETCH/COMFORT BREAK	
12:05 pm – 12:45 pm	Yeast Production for Fuel and Beverage Alcohol *Tobias Fischborn, Lallemand R&D (Canada)*	
12:45 pm – 1:45 pm	LUNCH	All Maisonneuve
1:45 pm – 2:30 pm	Yeast: Propagation for Fuel and Beverage Alcohol *Craig Wills, Lallemand Biofuels & Distilled Spirits (USA)*	SARAH BERNHARDT ROOM
2:30 pm – 3:15 pm	New Yeasts for Fuel and Beverage Alcohol *Emily Stonehouse, LBDS/Mascoma (USA)*	
3:15 pm – 3:45 pm	COFFEE BREAK	
3:45 pm – 4:30 pm	Distillation: Theory *Phil Madson, KATZEN International Inc (USA)*	
4:30 pm – 5:15 pm	Distillation: Practice *Tara Vigil, KATZEN International Inc (USA)*	

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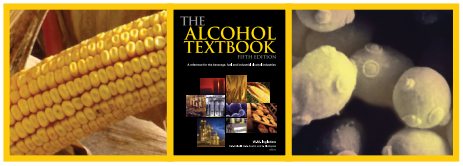

Wednesday combined session SEPT 14, 2016

8:00 am	BUSES FOR ALL TO NRC RESEARCH LABS	
8:50 am – 9:00 am	Welcome to Lallemand R&D at NRC *Frederic D'Aoust, Lallemand Biofuels & Distilled Spirits (Canada)*	NRC RESEARCH LABS
9:00 am – 9:45 am	Fermentation Management & Control of Yeast Stress *Mike Ingledew, Professor Emeritus, University of Saskatchewan (Canada)*	
9:45 am – 10:30 am	Microbial Contamination & Control in a Distillery *Francois van Zyl, Lallemand Biofuels & Distilled Spirits (USA)*	
10:30 am – 10:55 am	COFFEE BREAK	
11:00 am – 12:00 pm	LAB VISITS	
12:00 pm – 12:30 pm	Fluorescence Tests for Distillery Microbes *Annick Mercier, Lallemand Biofuels & Distilled Spirits (Canada)*	
12:30 pm – 1:30 pm	LUNCH	
1:35 pm – 2:40 pm	LAB VISITS	
2:45 pm – 3:20 pm	Key Analytical Methods for Process Monitoring *Joseph Kalkwarf, Lallemand Biofuels & Distilled Spirits (USA)*	
3:20 pm – 3:50 pm	COFFEE BREAK	
3:50 pm – 4:30 pm	Advanced Process Control for Alcohol Producers *Hank Brittain, OpX Control Inc (USA)*	
4:30 pm – 5:00 pm	Troubleshooting Problem Fermentations in Alcohol Plants *Ben Sunderhaus, Lallemand Biofuels & Distilled Spirits (USA)*	
5:05 pm	BUSES BACK TO HOTEL	
7:00 pm – 10:30 pm	Wine, Beer and Spirits Tasting *Complimentary food provided*	Les Voûtes (caves under hotel)

LAB VISITS (Order of rotation to vary)

Lab Visit I *Technology Lab, LBDS*	**Tour of Fuel Ethanol and Distilled Beverage Laboratory** *Demonstration of whole-grain corn mash fermentation*
Lab Visit II *Strain Development Lab*	**Tour of Molecular Biology Strain Improvement Laboratory** *Demonstration of yeast mutagenesis and screening techniques*
Lab Visit III *Microbiology Lab*	**Tour of Culture Collection/Microbiology Laboratory** *Demonstration of yeast counting by microscope and plating*
Lab Visit IV *Process Lab*	**Tour of Yeast Scale-up and Process Control Laboratory** *Demonstration of yeast production and scale-up strategies*
Lab Visit V *Genetics Lab*	**Tour of Genetic Identification Laboratory** *Demonstration of yeast and bacteria identification*
Lab Visit VI *Animal Nutrition Lab*	**Tour of Animal Nutrition Laboratory** *Discussions of coproduct nutritional value*

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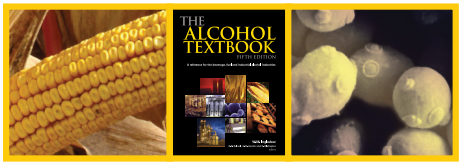

Thursday — fuel alcohol session — SEPT 15, 2016

8:30 am – 9:20 am	Energy, Mass and Water Balance *Scott Kohl, White Energy (USA)*	SARAH BERNHARDT ROOM
9:20 am – 10:10 am	Dryhouse Technologies in Distilleries *Dale Monceaux, AdvanceBio LLC (USA)*	
10:10 am – 10:40 am	COFFEE BREAK	
10:40 am – 11:30 am	Oil Separation from Corn Ethanol Processes *Jennifer Aurandt, Valicor (USA)*	
11:30 am – 12:20 pm	A Nutritionist's View of Distillers Grains *Kurt Rosentrater, Iowa State University (USA)*	
12:20 pm – 1:30 pm	LUNCH	
1:30 pm – 5:00 pm	Plant Tours to Ethanol GreenField, OR Diageo Global Supply OR Lallemand's Prefontaine Yeast Production Plant	

OPTION #1 GreenField Ethanol, *Varennes, Québec*
GreenField Ethanol of Quebec Inc. is an ICM-designed plant, completed in early 2007, that produces fuel-grade ethanol, carbon dioxide, distillers' dried grains, and MWDGS. Current capacity is 160 million liters (around 42 million US gallons) of fuel-grade ethanol per year, made from 15 million bushels of Québec corn. In 2008, GreenField Ethanol completed a second ICM-designed plant in Johnstown, Ontario, that produces 200 million liters of fuel-grade ethanol.

OPTION #2 Diageo Global Supply, *Salaberry-de-Valleyfield, Québec*
The original building dates from 1909 and became a distillery in 1938 producing alcohol for military purposes. It really became a whisky distillery in 1945 with the first whisky, Golden Wedding, being produced. During the fifties, new products such as Schenley OFC, Ron Carioca Rum, and Troika Premium Vodka came online. The sixties saw the construction of additional warehouses for aging and the addition of a grain dryer. On October 22, 1969, the one-millionth barrel was produced, followed by the second millionth in 1986. Today, the plant continues to produce world-renowned brands such as Smirnoff vodka, Captain Morgan rums, Gordon's London Dry gin, and VO Canadian whisky. In 2009 the plant was acquired by Diageo, the largest spirits manufacturer in the world, and produces 3.4 million cases of beverage alcohol annually.

OPTION #3 Lallemand's Préfontaine Yeast Plant *Montréal, Québec*
Lallemand was founded in Montréal at the end of the 19th century by a young immigrant from the Alsace region of France, Fred "Lallemand." The plant on Préfontaine Street was built in 1915, with production of baker's yeast starting there in 1923. Roland Chagnon acquired the business in 1952 and set it on a path of expansion. The Chagnon family remains the current owner. Today, the plant produces a range of liquid, cake, and dry yeasts for the fuel ethanol, beverage alcohol, and baking industries.

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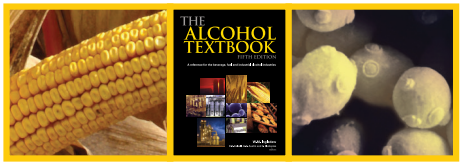

Thursday — beverage alcohol session — SEPT 15, 2016

8:30 am – 9:20 am	Beverage Alcohol Distillation Batch & Continuous Processes *Robert Piggot, Lallemand Biofuels & Distilled Spirits (Canada)*	VIEUX-MONTRÉAL ROOM
9:20 am – 10:10 am	Flavour Distillation for Grain Whisky *Douglas Murray, Diageo (Scotland)*	
10:10 am – 10:40 am	COFFEE BREAK	
10:40 am – 11:30 am	Pilot Fermentations: Grain Yield Potential & Conversion Process Optimization *Kevin Smith, Brown-Forman Corporation (USA)*	
11:30 am – 12:20 pm	Analytical Methods for Distilled Spirits *Douglas Murray, Diageo (Scotland)*	
12:20 pm – 1:30 pm	LUNCH	
1:30 pm – 5:00 pm	Plant Tours to Ethanol GreenField, OR Diageo Global Supply OR Lallemand's Prefontaine Yeast Production Plant	

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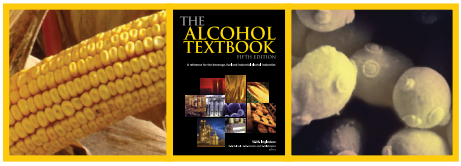

Friday combined session SEPT 16, 2016

8:30 am – 9:10 am	2nd Generation Biofuels: Ethanol from Lignocellulose *Frederic D'Aoust, Lallemand Biofuels & Distilled Spirits (Canada)*	SARAH BERNHARDT ROOM
9:10 am – 9:50 am	Alcohol Plants as Biorefineries *Charles Abbas, ADM (USA)*	
9:50 am – 10:10 am	COFFEE BREAK	
10:10 am – 10:50 am	Commercializing Cellulosic Ethanol *Speaker to be confirmed*	
10:50 am – 11:00 am	STRETCH/COMFORT BREAK	
11:00 am – 11:40 am	New Technologies for Alcohol Production *Scott Kohl, White Energy (USA)*	
11:40 am – 12:30 pm	Technical Opportunities in the Industry – Where Are We Going? *Phil Madson, KATZEN International Inc (USA)*	
12:30 pm – 1:00 pm	Course Wrap-up and Presentation of Certificates	