

The James B. Beam Institute for Kentucky Spirits ensures the welfare and prosperity of Kentucky's spirits industry. Through teaching, research and outreach, the Institute promotes economic sustainability, environmental stewardship and responsible consumption.

James B. Beam Institute
for Kentucky Spirits

2022 Annual Conference Agenda

THE BOURBON INDUSTRY'S RESEARCH AND DEVELOPMENT LEADER

The Beam Institute is a leader for Kentucky's spirits industry, creating exceptional teaching and outreach programs, along with multidisciplinary research to ensure sustained competitiveness from farm to product.

Conference Agenda Day 1



Conference Registration

7:30 AM - 9:00 AM at Great Hall Floor 2

Registration

Expo and Breakfast

8:00 AM - 9:00 AM at Ballroom A&B, 2nd Floor, Bill Gatton Student Center

Expo Poster Session Refreshments/Meals

Welcome and Opening Remarks

9:00 AM - 10:15 AM at Worsham Theater, Floor 2&3

Sponsored By:  Kentucky Di...

5 Subsessions

Welcome

9:00 AM - 9:10 AM

Speakers: Nancy Cox, Seth DeBolt

KY Agriculture and Bourbon - Welcome by KY Agriculture Commissioner Ryan Quarles

9:10 AM - 9:20 AM

Speaker: Ryan Quarles

The State of KY Bourbon

9:20 AM - 9:30 AM

Speaker: Eric Gregory

Independent Stave Company Welcome

9:30 AM - 9:45 AM

Speaker: Brad Boswell

KY and Distilling - Welcome by KY Governor Andy Beshaer

9:45 AM - 10:00 AM

Speaker: Andy Beshear

Expo and Hospitality Break - hosted by Speyside

10:15 AM - 10:45 AM at Ballroom A&B, 2nd Floor, Bill Gatton Student Center


Sponsored By:  Speyside

Expo Poster Session Refreshments/Meals

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Talent and the Workplace – Leadership for the Reset Work Environment

10:45 AM - 12:00 PM at Worsham Theater, Floor 2&3

Human Resources

6 Subsessions

Opening Remarks and Panelist Introductions

10:45 AM - 10:55 AM

Speaker: Brad Patrick

Organization Implications from the Pandemic Overview

11:10 AM - 11:20 AM

Speaker: Joe Bongiovi

Where are we with Diversity, Equity, and Inclusion in the workplace

11:20 AM - 11:30 AM

Speaker: Renee White

Defining the Great Resignation – Why People are leaving their jobs?

11:30 AM - 11:40 AM

Speaker: Susan Zhu

Hiring and Retention Dynamics; Learnings from a turbulent employment market

11:40 AM - 11:50 AM

Speaker: Christie Jackson

It is a great time to establish people and organization development plan

11:50 AM - 12:00 PM

Speaker: Sylvia Sanders

INVITATION ONLY: Private Distillers' Lunch - hosted by Heaven Hill

11:15 AM - 12:40 PM at Room 330 A/B, 3rd Floor

Sponsored By:  Heaven Hill

1 Subsession

INVITATION ONLY: Media Q&A with Distillers

12:15 PM - 12:35 PM

Lunch and Distillers' Panel - hosted by Fire Protection Services

12:00 PM - 1:30 PM at Harris Ballroom, 3rd Floor

Sponsored By:  Fire Protecti...

Refreshments/Meals

1 Subsession

Master Distillers' Chat

12:45 PM - 1:30 PM

Speakers: Harlen Wheatley, Conor O'Driscoll, Mark Coffman, Jodie Filiatreau, Lisa Wicker, Aaron Harris, Joyce Nethery, Denny Potter, Nick Smith, Lynne Dant, Brent Elliott, Kevin Brent Smith

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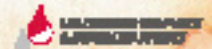
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Technical Session: Fermentation - Hosted by Lallemand

1:30 PM - 2:30 PM at Worsham Theater, Floor 2&3

Sponsored By:  Lallemand ...

Fermentation



Mitch Codd

Lallemand Biofuels & Distilled Spirits

[Speaker's Page](#)

3 Subsessions

The Metabolic Pathways Behind Flavor Development and How we can Manipulate them.

1:30 PM - 1:50 PM

Speaker: **Struan Reid**

Can Mezcal, Baijiu, Sake and Shochu Fermentation Systems Assist us in better Understanding Whiskey Spirits

1:50 PM - 2:05 PM

Speaker: **Gary Spedding**

Functional and Flavor Characteristics of Rye Grain Varietals for Whisky Production

2:05 PM - 2:20 PM

Speaker: **Harmonie Bettenhausen**

Expo

2:30 PM - 6:30 PM at Ballroom A&B, 2nd Floor, Bill Gatton Student Center

Expo

Poster Session

Hospitality Break - Hosted by PNC

2:30 PM - 4:00 PM at Ballroom A&B, 2nd Floor, Bill Gatton Student Center

Sponsored By:  PNC

Expo

Poster Session

Refreshments/Meals

Lallemand Sensory Session: Organoleptic Impacts of Yeast Produced Congeners

2:40 PM - 3:15 PM at Room 330 A/B, 3rd Floor

Sponsored By:  Lallemand ...

Sensory

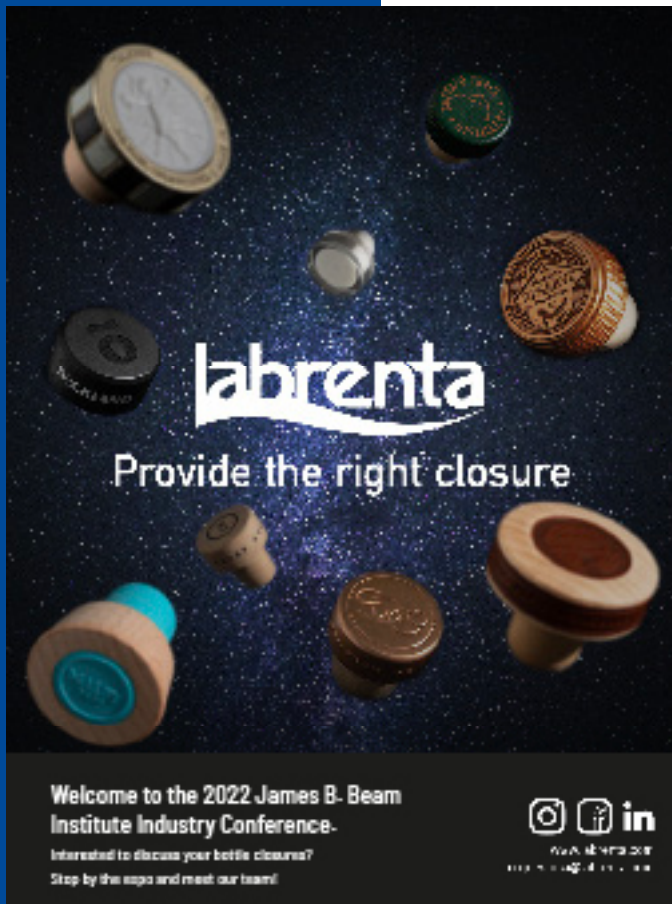


Mitch Codd

Lallemand Biofuels & Distilled Spirits

[Speaker's Page](#)




This session is limited to 30 participants.



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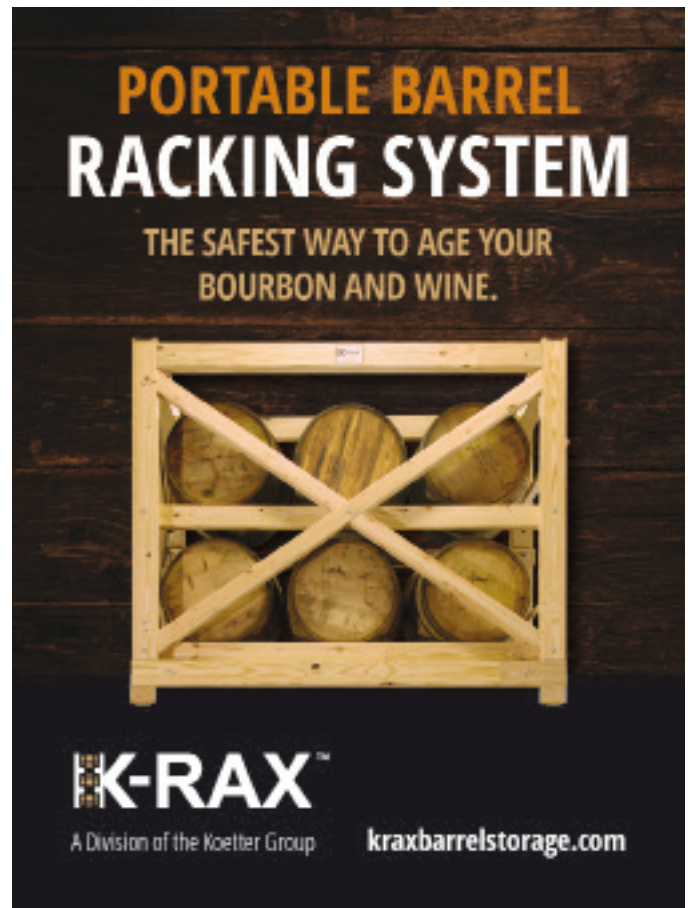
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Lallemand Sensory Session: Organoleptic Impacts of Yeast Produced Congeners

3:20 PM - 4:00 PM at Room 330 A/B, 3rd Floor

Sponsored By:  Lallemand ...

Sensory



Mitch Codd

Lallemand Biofuels & Distilled Spirits

[Speaker's Page](#)

This session is limited to 30 participants.

Breakout Session: Visitor Experiences

4:15 PM - 5:15 PM at The Cats Den, 1st Floor Gatton Student Center

Business

Sales - Tourism

3 Subsessions

Distillery Tourism- Consumers, Customers and Community

4:15 PM - 4:30 PM

Speaker: Kevin Didio

Trends in the Distillery Visitor Experience: How Brands Can Succeed in 2022

4:30 PM - 4:45 PM

Craft and Tradition

4:45 PM - 5:00 PM

Speaker: Kevin Brent Smith

Breakout Session: Distillation and Processing

4:15 PM - 5:15 PM at Worsham Theater, Floor 2&3

Distillation and Processing

3 Subsessions

Automated proofing and blending of single barrel products

4:15 PM - 4:30 PM

Speakers: Sarah Wilson, Brad Berron, Marcus Niemann

Filtration for Growth - Delivering Efficiency, Improving Quality, Reducing OPEX.

4:30 PM - 4:45 PM

Speaker: Ian Rickard



Analysis of congeners in bourbon with 1H NMR spectroscopy and data analytics

4:45 PM - 5:00 PM

Speakers: Michael Crowder, Ryan Kramer

Happy Hour and Expo- cohosted by Malteurop and OPC Pest Services

5:15 PM - 6:30 PM at Ballroom A&B, 2nd Floor, Bill Gatton Student Center

Sponsored By:  Malteurop ...  OPC Pest S...

Expo

Poster Session

Refreshments/Meals

Conference Agenda Day 2



Expo and Breakfast

8:00 AM - 9:00 AM at Ballroom A&B, 2nd Floor, Bill Gatton Student Center

Expo

Poster Session

Refreshments/Meals

Diversity, Equity, Inclusion and Representation in the Distilling Industry

9:00 AM - 10:15 AM at Worsham Theater, Floor 2&3

DEI



Danelle Stevens-Watkins

Vice President for Research (D&I)
University of Kentucky

[Speaker's Page](#)



Victoria Russell

Chief Diversity & Inclusion Officer
Beam Suntory

[Speaker's Page](#)



Victoria Butler

Master Blender
Uncle Nearest, Inc.

[Speaker's Page](#)



Kate Jerkens

Chief Business Officer
Uncle Nearest, Inc.

[Speaker's Page](#)

Expo and Hospitality Break

10:15 AM - 10:45 AM at Ballroom A&B, 2nd Floor, Bill Gatton Student Center

Expo

Poster Session

Refreshments/Meals

Technical Session: Sustainability - hosted by American Farmland Trust

10:45 AM - 12:00 PM at Worsham Theater, Floor 2&3

Sponsored By: American F...

Sustainability

5 Subsessions

Introduction

10:45 AM - 10:50 AM

Speaker: **Billy VanPelt III**

American Farmland Trust

10:50 AM - 11:00 AM

Speaker: **Scott Franklin**

Certification: Helping to ensure Tomorrow's White Oak Forests Today

11:00 AM - 11:15 AM

Speaker: **Dominic Stelzer**

Genomic and genetic resources of American white oak

11:15 AM - 11:30 AM

Speaker: **C. Dana Nelson**

White Oak Stave Log Supply and Sustainability

11:30 AM - 11:45 AM

Speaker: **Jeff Stringer**



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Lunch and Keynote

12:00 PM - 1:30 PM at Harris Ballroom, 3rd Floor

Sponsored By:  Great Weste...

Refreshments/Meals **Sustainability**

1 Subsession

Agave Spirits: To a Sustainable Production?

12:30 PM - 1:15 PM

Speaker: Ana G. Valenzuela Zapata

Breakout Session: Comprehensive Sustainability

1:30 PM - 2:30 PM at The Cats Den, 1st Floor Gatton Student Center

Social Responsibility

3 Subsessions

B Corp Certification- The Maker's Mark Journey

1:30 PM - 1:45 PM

Speaker: Kim Harmon

Social Responsibility at the University of Kentucky

1:45 PM - 2:05 PM

Speakers: Ashley Hinton, Ashley Gann

The Impact of Corporate Social Responsibility on Brand Relationships

2:05 PM - 2:20 PM

Speaker: John Peloza

Breakout Session: Maturation Chemistry

1:30 PM - 2:30 PM at Worsham Theatre, 2nd and 3rd Floor, Bill Gatton Student Center

Maturation

2 Subsessions

Monitoring the Health and Wellness of your Maturation Method

1:30 PM - 1:45 PM

Speakers: Steven Schafrik, Jeff Phelps

Barrel & Body: The Chemistry of What Happens Inside

1:45 PM - 2:00 PM

Speakers: Colin Blake, Andrew Wiehebrink

Expo and Hospitality Break

2:30 PM - 3:00 PM at Ballroom A&B, 2nd Floor, Bill Gatton Student Center

Expo **Poster Session** **Refreshments/Meals**

Technical Session: Spent Grains

3:00 PM - 4:00 PM at Worsham Theater, Floor 2&3

Spent Grains

Sustainability

3 Subsessions

Closed Loop Solutions for Spent Distillers Grain

3:00 PM - 3:15 PM

Speaker: Dan Spracklin

The Current State of Bourbon Grains Co-products in Kentucky

3:15 PM - 3:30 PM

Speakers: Brad Berron, Blake Layfield

Can Sustainability be Profitable? A Case Study with Whole Stillage

3:30 PM - 3:50 PM

Speakers: Jagannadh Satyavolu, Cliff Speedy

Technical Session: Implementing Sustainability - hosted by KY Cabinet for Economic Development

4:15 PM - 5:15 PM at Worsham Theater, Floor 2&3

Sponsored By:  KY Innovati...

Sustainability



Jessica Chen

Director of US Whiskeys
Pernod Ricard

[Speaker's Page](#)



Rachel Nally

Heaven Hill

[Speaker's Page](#)



Kim Harmon

Makers Mark

[Speaker's Page](#)



Kenya Stump

Kentucky Energy Policy

[Speaker's Page](#)

Panel Discussion with

Kim Harmon - Makers Mark

Rachel Nally - Heaven Hill

Jessica Chen - Pernot Ricard

Moderated by Kenya Stump - Kentucky Energy Policy

Conference Agenda Day 3



Expo and Breakfast

8:00 AM - 9:00 AM at Ballroom A&B, 2nd Floor, Bill Gatton Student Center

Expo

Refreshments/Meals

Technical Session: Maturation Modeling

9:00 AM - 10:15 AM at Worsham Theater, Floor 2&3

Maturation

3 Subsessions

Bourbon barrel mechanics: measurement and modeling of how charred oak barrels respond to forces, temper

9:00 AM - 9:20 AM

Speakers: Christine Trinkle, Phil Luddeke, Andrew Yourick

Quality Assurance of New Oak Barrels using Computer Vision

9:20 AM - 9:40 AM

Speakers: Stephen Parsons, Phil Luddeke, Andrew Yourick

Predicting Barrel Yield with Data Science

9:40 AM - 10:00 AM

Speaker: Paul Ditterline

Expo and Hospitality Break

10:15 AM - 10:45 AM at Ballroom A&B, 2nd Floor, Bill Gatton Student Center

Expo

Refreshments/Meals

Technical Session: Supply Chain - Hosted by Averitt

10:45 AM - 12:00 PM at Worsham Theater, Floor 2&3

Sponsored By:  Averitt Expr...

Supply Chain

3 Subsessions

International Supply Chain Best Practices for Distilled Spirits

10:50 AM - 11:10 AM

Speakers: Todd Harrett, Charlie McGee

Getting the Most Out of The Equipment You Have

11:10 AM - 11:25 AM

Speaker: Aaron Harris

Packaging and Product Development for Craft Spirits

11:25 AM - 11:45 AM

Speaker: Garrett Mager

Networking Lunch

12:00 PM - 1:30 PM at Harris Ballroom, 3rd Floor

Refreshments/Meals

Breakout: Safety in Distiling

1:30 PM - 2:30 PM at Worsham Theater, Floor 2&3

Safety

3 Subsessions

Emergency Preparedness and Event Planning Safety

1:30 PM - 1:45 PM

Speakers: Tate Preston, Chris Bowling

Warehouse Safety-Demolition of full standing warehouse

1:45 PM - 2:00 PM

Speakers: Larry Krift, Randy Shelley

Workers' Compensation Reported Injuries among Distillery Industry Workers, 2010-2019

2:00 PM - 2:15 PM

Speaker: Wayne Sanderson

Breakout Session: Business

1:30 PM - 2:30 PM at The Cats Den, 1st Floor Gatton Student Center

3 Subsessions

Kentucky Bourbon and Water: A Strategic Pairing

1:30 PM - 1:50 PM

Speaker: Kelley Dearing-Smith

The Changing Three-Tier System

1:50 PM - 2:05 PM

Speaker: Robert Hausladen

The Current State of Kentucky Alcohol Laws

2:05 PM - 2:20 PM

Speaker: Stephen Amato

Technical Session: Distillery from the ground up- Hosted by Beam Suntory

2:45 PM - 4:00 PM at Worsham Theater, Floor 2&3

Distillery Construction

3 Subsessions

Distillery from the ground up - How the Fred B. Noe distillery came to life

2:45 PM - 3:00 PM

Speakers: Freddie Noe, Cathy Reynolds, Jason Jones, Rob Sherman, Donald Blincoe, Andy Vislisel, Lisa Banner, Will Adams

Whiskey Specialist Apprenticeship Program

3:15 PM - 3:30 PM

Speakers: Glenna Joyce, Michael Voils

Fred B. Noe Distillery - Building a Distillery from the Ground Up

3:30 PM - 3:45 PM

Speakers: Eric Huelsman, Cash Moter

Kentucky Bourbon and Water: A Strategic Pairing

1:30 PM - 1:50 PM

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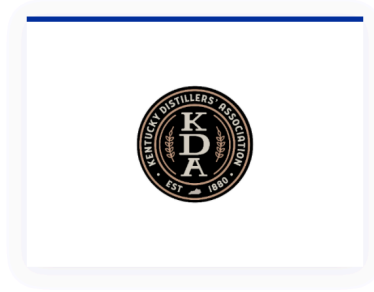
Closing Remarks

4:00 PM - 4:15 PM at Worsham Theater, Floor 2&3

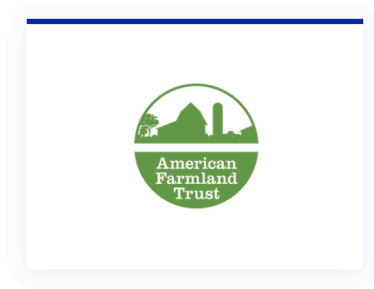
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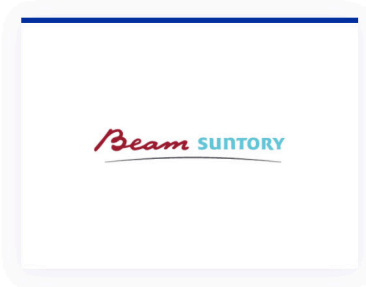
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Technical Session Partner



Lunch Partner



Hospitality Partner



Experience Partner



Happy Hour Partner



Posters, Exhibitors & Map



Posters

Making Space for Women in Bourbon: Insights from Female Industry Insiders

Taylor Davis

The purpose of this project was to document the experiences of women in the bourbon industry, as this project fills a gap in both scholarly and popular attention to the many women who play a role in Kentucky's 8.6 billion-dollar bourbon industry. This research emerged from the larger Women in Bourbon Oral History Project, launched in Spring 2021, in partnership with the University of Kentucky's Louie B. Nunn Center for Oral History, the James B. Beam Institute for Kentucky Spirits, and advanced by Dr. Fernheimer and students in Bourbon Oral History. A total of twenty-one interviews were completed. To date, nineteen of those interviews have been digitally indexed, transcribed, and authenticated (accessible here). Through the process of working to index and authenticate transcripts for these interviews, I and other undergraduate researchers identified key themes such as: "who gets a seat" at the proverbial leadership table and "how do we expand who counts" as bourbon industry leaders. Based on the key quotes identified and organized, our team crafted pre-production materials for two podcast episodes. The creation of podcasts and transcriptions from these primary interview materials will allow a broader audience to access these insights into the prominent bourbon industry. By giving a voice to these female business professionals through the oral history interviews, our team was able to call attention to the importance of personal narratives and industry representation. Based on our research, there are important ways that women within this industry break the conventionally accepted mold of "white, male bourbon executive", but this shift is in its early phases, and there is a strong need to continue "making space" for women of all backgrounds by giving more of them an opportunity to have a "seat at the table."

Promoting Sustainability of White Oak Through a Tree Improvement Program

Laura DeWald

White oak (*Quercus alba*) occurs throughout eastern US forests where it is important to how these forests function, and it also has high value to the forest products industry. Future availability of white oak of desirable quality to harvest is uncertain. The white oak genetics and tree improvement program (WOGTIP) was developed at University of Kentucky as a long-term venture to collaborate with industry (forest, wood, distilling) and natural resources agencies and organizations to quantify genetic variation in white oak and improve traits that have economic and ecological value. WOGTIP supports the goals of the White Oak Initiative and the James B. Beam Institute for Kentucky Spirits by (1) providing a sustainable supply of high quality, improved white oak seedlings to meet current and future ecological, conservation and economic goals, and (2) by providing genetic resources for academic and industrial research and development. There are three phases to WOGTIP and the distilling industry is participating in all phases. In Phase 1, white oak acorns are being collected from the entire geographic range of white oak. In Phase 2, seedlings grown from the acorn collections are planted in genetic tests across the range of white oak to evaluate traits of interest to stakeholders. In Phase 3, production areas of acorns from superior parents will be established to supply acorns to state nurseries so they can provide improved white oak seedlings for reforestation. Pollen mixing among superior parents within these areas creates genetically diverse, high quality offspring. Controlled pollination can be used to breed for traits that will support ecological success in the forest and increased economic value for wood products industries.

Clarification of Thin Bourbon Stillage for Utilization

Jack Groppo

A series of initial characterization of clarification tests were conducted on thin stillage produced as a byproduct from the distillation. Electrokinetic behavior of fresh produced, as well as aged stillage solids showed a positive zeta potential in the acidic pH range below a pzc of pH 5. Under these natural pH conditions, dosages as low as 20 ppm of potable water grade organic polymeric flocculants reduced the volume of solids by a factor of 5 while generating $\lt; 200$ NTU clarified water in 30 minutes. Under these conditions, the settled solids were found to be suitably concentrated for utilization as a nitrogen source in composting.

Internship Experiences of a James B. Beam Institute Student

Sydney Kolnsberg

Giving a brief overview of my internship experiences at E&J Gallo and Wild Turkey and how they relate to my coursework for the DWBS certificate.

Posters

Serialization of Bourbon Barrels for Optimized Maturation

Brandon Young

As the bourbon industry continues to expand the number of barrels required to be made will increase as well. Despite the benefit of a growing market, a problem is created where the quality goes down when more barrels are made as the ability to understand what is going on becomes more difficult at scale. In an attempt to reduce this from happening, and get data from external measurements, sensors, or a combination of both, inventory tags are used. The inventory tags (Barcode) are put on a barrel to have a way to assign the data and overall experiences of a barrel to that tag to enable direct comparison. The limitation of the current tags is that they are found to be 80% or less durable as they are paper based where they fail due to alcohol exposure and/or general wear-and-tear exposure. A tag is RF-based without any chips (like traditional RFID) enables a cost effective solution that has a chemically resistant protective film that prevents mechanical and chemical damage to the tag. During an initial pilot test with over 100 barrels, these new chip-less tags were found to be 99% durable enabling the foundation to properly serialize bourbon barrels no matter the scale. This is disruptive as the current options are a barely durable Barcode system or not use a tag and only have data to a lot of barrels or daily average. The data and information from a tag that can withstand the experiences a bourbon barrel may experience enables the ability to actively update production, rickhouse conditions, and even chemistry of alcohol to improve yield and quality of product.

Streamline your Distillery with Automated In-Line Blending

Robert Veitch

As the economy continues to adapt to the pandemic, and manufacturer's struggle to maintain efficient supply chains and ever increasing consumer demands, distillers are seeking out creative solutions to meet these demands and do so quickly. One solution is precise automated in-line blending. While in-line blending is not a new technology, full adoption has been slow due to the perceived risk of implementation. Due to all time high demands and time constraints, in-line blending is rapidly being embraced and implemented across the industry as the technology allows the distiller to make more product, with less labor, less equipment, less floorspace, and in less time. Furthermore, this technology, when done properly, introduces precision and execution to specification the first time, every time. The JCS UltraBlend™ technology is a platform which is applicable throughout many processes within the distillery. Whether the application is bulk high-speed cutting, filling barrels, single barrels, or supplying direct to filler, the foundational principals within the algorithm remain true and allow the repeatability and execution required to optimize your process. Whether implementing to have consistency across the infrastructure, reduce labor, increase capacity and/or profitability, adapting your process for blending reduces much risk and ultimately liberates the end user from existing constraints. This success stems from managing the details. JCS utilizes trend analysis and reporting to make data driven decisions both during the project and long thereafter. This gives the leaders the necessary information at the right time, enabling them to make the proper business decisions, both short and long term. We see that the industry is quickly embracing this technology and are excited to collaborate and support the entire Bourbon Industry as they pivot and react to meet the rising demands of the consumer.

¹H NMR spectroscopic analysis of bourbon whiskeys

Huan Zhang

Bourbon whiskeys, which are primarily produced in Kentucky, are uniquely-American, legally-defined distilled spirits. Made from at least 51% corn and most often aged over 4 years in new, charred oak barrels, the unique flavor profiles of American bourbon whiskeys attract a huge number of consumers around the world, generating 4 billion U.S. dollars in revenue in 2019. A recent "bourbon boom" has resulted in the emergence of many new bourbons and large increases in prices, with secondary markets demanding over \$2K for a fifth of some brands. The large rapid increase in the number of bourbons and in the large price increases raises potential concerns about the quality of the produced spirits and in the authentication of the certain, highly-sought after brands. Therefore, in our study, we utilized ¹H NMR spectroscopy to analyze the chemical compositions of four types of American bourbon whiskeys (Ageing, barrel-conditioned, single barrel and non-aged) and the bourbon whiskeys from seven distilleries (Buffalo Trace, Heaven Hill, Jim Beam, Four Roses, Wilderness Trails, Wild Turkey, and Brown Forman), in an effort to probe for chemical profiles as a function of mashbill and maturation conditions. This study discovered that all the identified significant compounds are existing constantly through bourbon whiskeys regardless of the difference of mashbill, distillery, and ageing years, but they possess different concentrations. Also, aromatic compounds are usually introduced after the maturation in oak barrels but absent before ageing. Significantly, the ageing process does matter greatly in determining the flavor profile when comparing to different conditioned American bourbon whiskeys.

Posters

Characteristics of Distillers Dried Grains from Multiple Distilleries

Kurt Rosentrater

With the rapid growth in the beverage alcohol industry in recent years, considerable quantities of fermentation byproducts and coproducts are now being produced. There is a dearth of information about physical and chemical properties of stillage, wet and dry distillers grains, and other byproducts. Some research is being devoted to determining chemical/nutritional properties, and to increase their inclusion in livestock diets; physical properties of these materials, however, have been largely ignored. Using standard laboratory protocols, several physical properties for typical distillers dried grains from multiple distilleries were determined, including moisture content, water activity, thermal properties (conductivity, resistivity, and diffusivity), bulk density, angle of repose, and color. The DDG samples in this study were golden-brown in color, and exhibited physical properties somewhat similar to other dry feed ingredients, such as hominy feed, corn gluten feed, and other grain-based materials. As a first step, the numerical data generated during this study will help fill a current void for design information for both the beverage and livestock industries.

Sustainable Control Strategies based on a new innovative inline sensor

Axel Kather

A sustainable production of distilled spirits and other alcoholic beverages is not just an economic advantage but also a responsibility towards customers and the society. This poster will present three digital solution bricks to solve some main challenges for distillers and drive sustainable spirit production: An innovative sensor using advanced technology based on dielectric and conductivity measurements to enable industrial fluid monitoring delivering valuable data insights such as telling when and for how long to clean, or other product fingerprint related information. Algorithms in the ProLeiT Process Control Systems (PCS) with integrated Manufacturing Execution Systems (MES) that work with the sensor information to automate the Clean-In-Place (CIP) cycle and other process optimization based on product characteristics such as alcohol content and others. Additional software Apps complementing this information with holistic process insights, like the Clean-In-Place Advisor App which brings domain expert features for CIP analytics to better assess performance and quality. This diagnostic tool helps users to continuously track and optimize their CIP processes, while contributing to the digitalization of assets and Quality 4.0. First results in lab tests as well as industrial pilots can demonstrate fast and secure detection of phase changes in the production lines (product changes, product to water, caustic or acid to water, etc.) that can be used to optimize the CIP process, reduce waste and chemical use as well as driving other decisions based on product characteristics, such as alcohol content or others. In the future, the combination of this new sensing technology with modern Process Control Systems and Apps providing AI analysis on the available data, can lead to significant process improvements such as closed loop distillation control based on alcohol content in the condensed vapor, optimized cutover between different fractions of the distillate and blending optimization.

An Assessment of Distillery Safety Training Needs and Training Deployment to Address the Most Pertinent Safety Issues

Tanya Franke-Dvorak

EduceLab: Heritage Science and Bourbon Heritage

Mike Detisch

Premium Vendors



Vendors



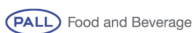
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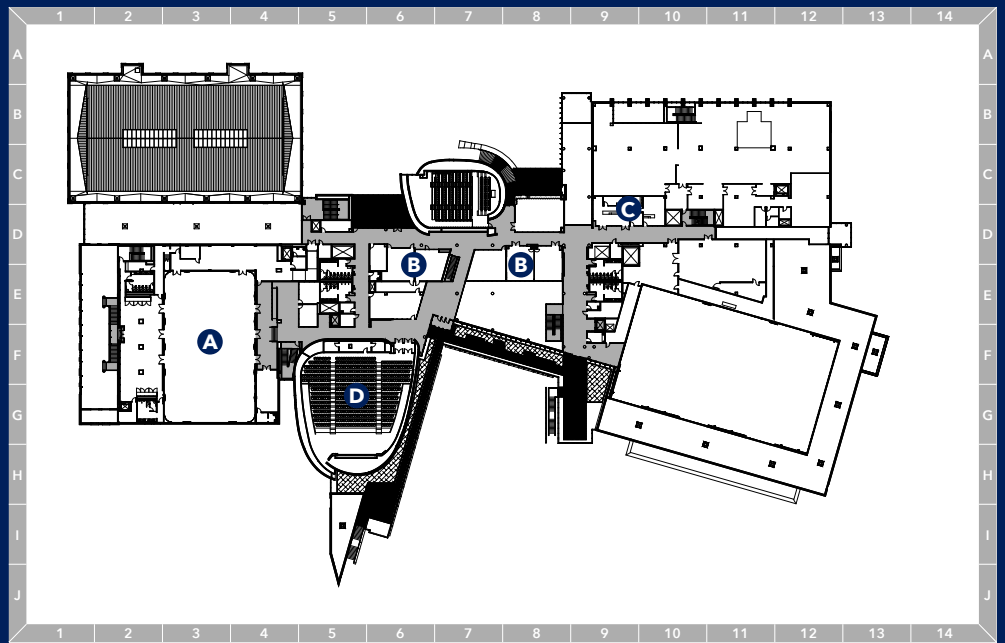
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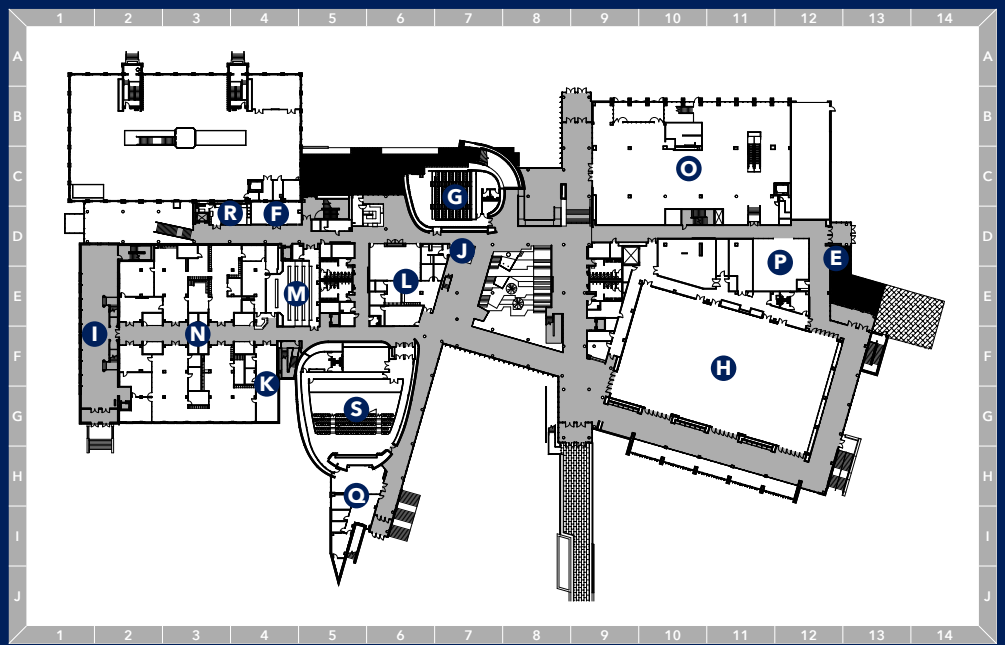
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- D6 & D8 | Meeting Rooms **B**
- D9 | Wildcard ID & UK Dining Offices **C**
- G5 | Worsham Cinema **D**

LEVEL 3



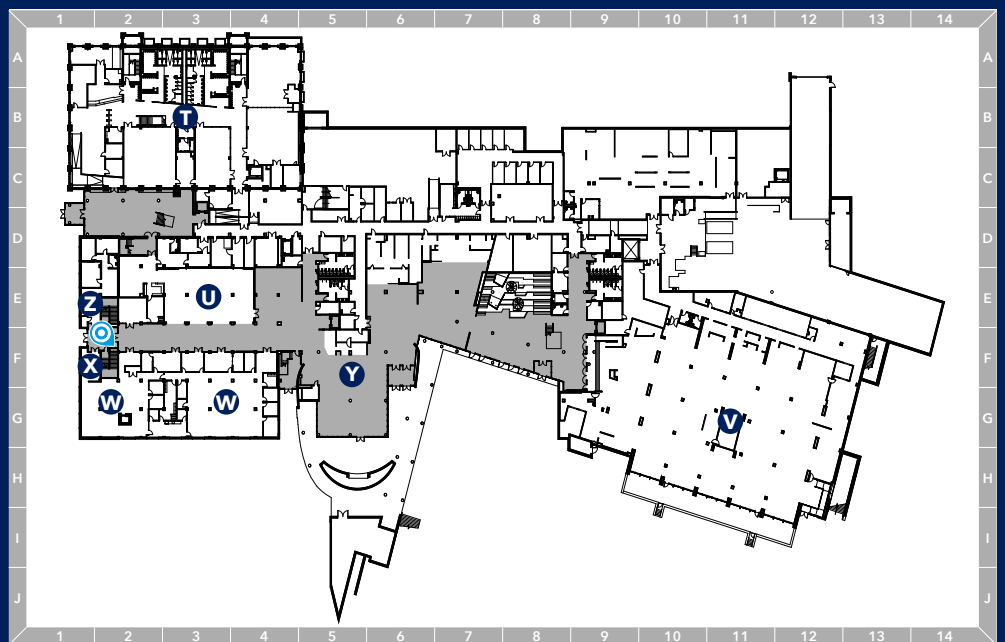
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- C7 | Blue Box Theater **G**
- F11 | Grand Ballroom **H**
- F1 | Great Hall **I**
- D7 | Information / Box Office **J**
- F4 | LGBTQ* Resources **K**
- E6 | Martin Luther King Center **L**
- E5 | Senate Chamber **M**
- F3 | Center for Student Involvement **N**
- C10 | UK Bookstore & Cafe **O**
- E12 | UK Federal Credit Union **P**
- H5 | Visitor Center **R**
- D3 | Wildcat Pantry **S**
- G5 | Worsham Cinema **S**

LEVEL 2



- B3 | Alumni Gym Fitness Center **T**
- E3 | Cats Den **U**
- G11 | Champions Kitchen **V**
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- F2 | Passport Acceptance **X**
- F5 | Retail Dining **Y**
- E2 | WRFL **Z**

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The production of bourbon whiskey is an important driver of Kentucky's economy, with tremendous potential for expansion.

Established in 2019, the partnership between the University of Kentucky and the James B. Beam Distilling Co. was formed to facilitate the growth of Kentucky's spirits industry. With the goal of supporting the development of Kentucky's workforce, promoting Kentucky as the production and innovation capital of the bourbon industry, and building effective alcohol awareness initiatives, this partnership will promote the welfare, prosperity and sustainability of Kentucky's spirits industry for generations to come.

Dr. Seth DeBolt
Director, James B. Beam Institute for Kentucky Spirits
309 Plant Science Building
Lexington, KY 40546-0312
beaminstitute@uky.edu

