

BUILDING A RESEARCH NETWORK FOR COLORADO BREWERS AND DISTILLERS

HOSTED BY

COLORADO STATE UNIVERSITY

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COLLEGE OF AGRICULTURAL SCIENCES | DEPARTMENT OF FOOD SCIENCE AND HUMAN NUTRITION
DEPARTMENT OF AGRICULTURAL RESOURCE ECONOMICS | VICE PRESIDENT FOR RESEARCH

FORUM OVERVIEW

Content summary

The Liquid Arts Research Forum's primary objective was to initiate research collaboration by bringing together academics with industry personnel. To this end, the breakout sessions were designed to accomplish the following goals:

1. Identify and prioritize prominent issues facing Colorado craft brewers and distillers
2. Identify research areas suitable for academic-industry collaborative efforts
3. Build networks that promote collaboration between the Liquid Arts Industry and CSU researchers to address research questions and co-develop solutions to problems of mutual interest

A summary of the issues identified under each breakout session topic and areas for future collaboration is provided below:

- **Building the Colorado Brand.** Participants focused on defining the scope, target, and substance of the Colorado Brand. Within this topic, four prominent issues were identified and prioritized: organization and scope, existing models as a template, what do consumers value and recognize, and Colorado ingredients. Four potential research areas/questions for future collaboration were also identified:
 1. What is the current level of recognition of the Colorado Brand from beer, wine and spirits? How far has the recognition of the Colorado Brand reached?
 2. What do consumers outside of Colorado recognize and associate with Colorado beer?
 3. Is it possible to build a Colorado Brand based on product diversity and quality? What are the mechanisms? Is there a marketable quality found in raw materials grown in Colorado for beer and spirits?
- **Sustainability.** Participants discussed a holistic approach and encouraged to think creatively about sustainability. Six important issues were identified and prioritized within this topic: brewing operations, agriculture, water, spent grain and other byproducts, social, and sustainability assessment.
- **Quality control and system improvement.** The session approached quality from both the producer's and the consumer's perspective and contrasted the two. Participants developed and prioritized four notable issues: defining quality, interpretation and application of QC data, where do you find science and is it trustworthy, and set centralized QC standards and in-house setups. Six research areas/questions were identified for further development:
 1. Define measures/standards of quality in brewing and distilling.
 2. Creation of CSU website clearinghouse for Liquid Arts research findings.
 3. What measurement facilities should be available in-house at all breweries and distilleries, and what are best provided through large, centralized laboratories?
 4. Who can assist in the interpretation of measurement results and deciding how to act on them?
 5. Development of a system for obtaining peer feedback on the quality of products.

6. How to find a balance between consumer education on beer styles and perception of quality.
- **Navigating federal, state, and local regulation.** The discussion encompassed the cost of compliance and enforcement in addition to the actual regulations. This resulted in four topics being identified as high interest: resource efficiency, safety, licensing issues, and brand registration. The discussion also yielded three future research areas for collaboration:
 1. How do regulators currently disseminate information and data to licensees and other participants in the liquor industry? Can these methods be improved? What level of awareness do licensees have of these opportunities?
 2. Where do licensees feel like they have the least of the law or relevant regulatory expectations? How can this be addressed?
 3. To what extent do licensees experience “information overload”? Are there methods of reducing the amount of “clutter” and focusing on topics that are important to regulators and licensees?
 - **Bringing craft beer into grocery and convenience stores.** This session focused on the strategies Liquid Art producers should adopt to make the most of the upcoming changes in the Colorado distribution laws. Participants generated and prioritized four areas of interest: new strategies for liquor store only brands, target consumers, how do grocery stores buy and operate, and strategies and macro-implications for brewers. Three research for future collaboration were also enumerated:
 1. How will consumers react to beer being sold in chain stores? Will they differentiate between craft versus non-craft?
 2. How will chain store desire for price consistency impact availability of craft beer?
 3. Will non-independent distributors seek to promote craft beers at chain stores, or will we see anticompetitive forces emerge that favor “faux craft” over “real craft”?
 - **Ingredients and raw materials.** Attendees addressed the quality, form, and source of both core ingredient and adjuncts. Five topics were deliberated and prioritized: yeast and fruit, market, water, hops, and malt/grain. Three future lines of research were identified:
 1. Would the Liquid Arts industry support a Colorado hop production project that focuses on producing and breeding native hop cultivars in a controlled environment (e.g. *Humulus lupulus* var. *neomexicanus*)?
 2. The state of Colorado contains climates that are better suited to hop growth than the Yakima Valley, WA. If the Liquid Arts industry is willing to help offset the startup costs, Colorado could become a producer of a substantial amount of high quality Colorado grown hops that are produced fresh throughout the year in a controlled environment and/or once a year in the field. Would the industry support hops as a new crop for Colorado?
 3. Would the Liquid Arts industry help support a study on the economics of controlled environment hop production?

- **Equipment and engineering.** Participants covered equipment, efficiency, and best practices that account for brewery size. Four prominent topics within these areas were identified: equipment solutions, guidance, process optimization, and instrumentation and continuous automation.
- **Industry specific continuing education.** This session sought to align what and how the industry wished to learn with the resources currently available at CSU and what could potentially be offered in the future. Participants developed and prioritized six topics of interest: courses and certifications versus degree programs, access to CSU research and resources, certifications and short courses to choose from, how to find who to talk to at CSU, online programs and clearinghouse courses, and style versus creativity. Four research areas/questions were identified for future development:
 1. Forging a partnership between industry and CSU for developing means for research information access and exchange as well as continuing education opportunities.
 2. How best to facilitate research collaborations between industry and CSU laboratories?
 3. Creation of a newsletter and website for disseminating information on brewing and distilling gained through academic research.
 4. Development of workshops, courses, certificates and a graduate degree program.

The rest of this document provides a general overview focused on the primary objective. The first section reveals how the attendees prioritized the breakout session topics by examining both their participation and voting behavior. The second section addresses common issues identified across breakout sessions. The third section enumerates the potential benefits the Liquid Arts Industry and CSU stand to gain from collaborating with one another. The fourth and final section acknowledges the people and organizations whose support made the Liquid Arts Research Forum a reality.



Academic Interest and Industry Priorities

Breakout session topic priority was determined using two metrics, attendance and votes. Both tables have votes split into three categories to reveal where academic and Industry priorities align as well as where they differ. In the table, attendance is shown as a percentage of the total attendees present during each of the two breakout sessions to provide an idea of the relative popularity of each topic.

In the first breakout session, **building the Colorado Brand** was the most attended topic as well as the most highly prioritized by academics. However, among Industry attendees, it was only third in terms of priority. Industry attendees mostly highly prioritized **quality control**, which was the second highest priority topic for academics, as well as the second most attended. “Sustainability” was the third most attended topic, third in priority for academics, and second in priority for Industry attendees.

The second breakout session, **ingredients and raw materials** was the most attended topic as well as the most highly prioritized by Industry attendees. Academics most highly prioritized **industry specific continuing education**, which was second in terms of priority to Industry attendees and third in terms of attendance. “Equipment and engineering” and “bringing craft beer into grocery and convenience stores” tied for the second most attended topic.

Table 1: Attendance and votes* cast for each breakout session topic

Topic	% attendance	Votes		
		Academic	Industry	Overall
<i>Breakout session I (73 participants)</i>				
Building the Colorado Brand	34%	61	97	158
Sustainability	25%	30	104	134
Quality control	27%	33	114	147
Navigating federal, state, and local regulation	14%	15	59	74
<i>Breakout session II (59 participants)</i>				
Bringing craft beer to grocery and convenience stores	19%	25	48	73
Ingredients and raw materials	39%	30	125	155
Equipment and engineering	19%	26	82	108
Industry specific continuing education	23%	32	96	128

*Includes initial and plenary votes



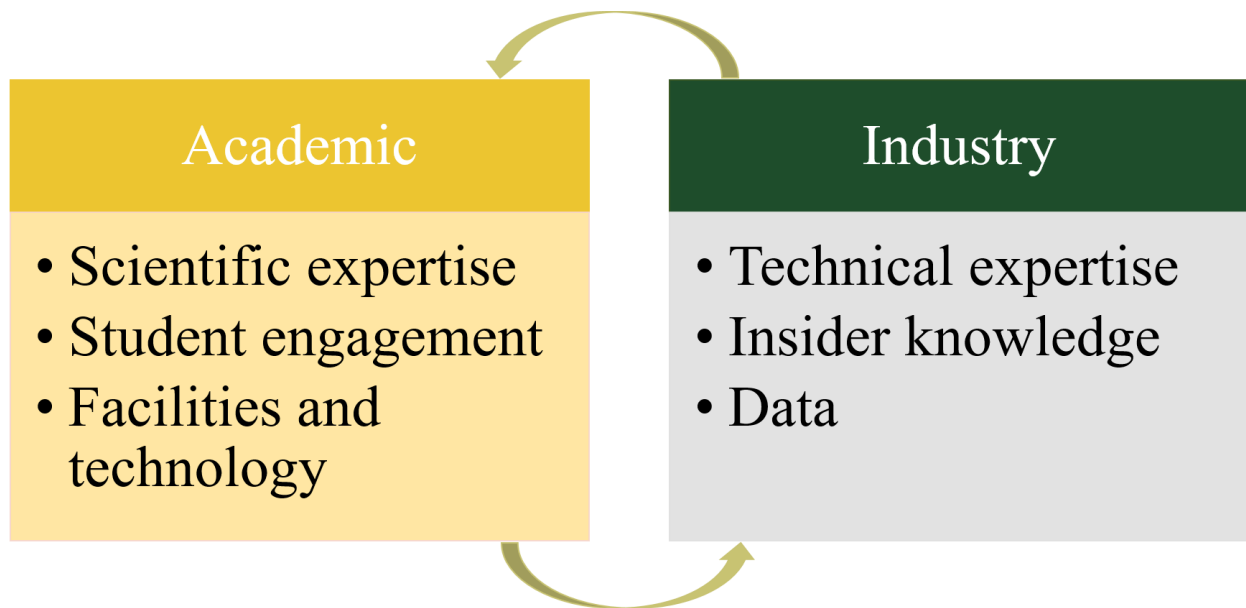
Common issues from across breakout sessions

Some common issues appeared across breakout session discussions, indicating an elevated importance for a particular change or resource. Perhaps the most prevalent commonality was the need for a single, searchable, centralized resource where the Liquid Arts Industry can find information relevant to their trade. This is in response to much of the information they would like to access being scattered, difficult to interpret, and/or behind a paywall. Almost as common was the desire for better communication with CSU. Potential solutions were suggested, such as a page with the research interests of faculty interested in working with Industry partners or creating a point of contact within the university approachable by the Industry. It was also suggested that communication between CSU and the Liquid Arts Industry could be facilitated by the Colorado Brewers Guild and Colorado Distillers Guild. Industry attendees also noted that communication could be improved between themselves and along the supply chain. Such communication could be in the form of equipment and ingredient reviews, peer feedback, and guidance on how to become more sustainable.



Framework for a public-private partnership

The primary objective of the Liquid Arts Research Forum was to initiate research collaboration by bringing together academics with Industry personnel. This is because of the potential to form a symbiotic relationship where both CSU and the Liquid Arts Industry are both made better off through working together. As with any worthwhile endeavor, there are challenges that need to be overcome. As faculty at a public institution, CSU researchers may have different objectives than industry personnel. However, collaboration between the Liquid Arts industry and CSU should not be limited to research questions both parties find mutually interesting. By identifying resources and services they can exchange, CSU and the Liquid Arts Industry can expand their potential to collaborate with each other. Another challenge will be maintaining effective communication between CSU and the many players that compose the Liquid Arts Industry due to the asymmetry in size and numbers. Working through trade organizations and having a clear point of contact at CSU will help both sides communicate effectively. Perhaps most importantly, building trust between CSU and the Liquid Arts Industry is a critical component for the success of the proposed private-public partnership and will develop over time by delivering on commitments.



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