41\textsuperscript{ST} Barley Improvement Conference

Hacienda Hotel
San Diego, California
January 12-13, 2017
Thank You!

**Sponsors**
American Malting Barley Association  
Idaho Barley Commission  
Minnesota Barley Research & Promotion Council  
Montana Grain Growers Association  
Montana Wheat & Barley Committee  
National Barley Growers Association  
North Dakota Barley Council  
Washington Grain Commission

**Speakers**
AMBA Staff – Scott & JoAnn

**Attendees**
American Malting Barley Association, Inc.

REGULAR MEMBERS (27)

AB-InBev
Bell’s Brewery
Boston Beer
Briess Malt & Ingredients
Brooklyn Brewery
Brown-Forman
Cargill Malt
Craft Brew Alliance
Deschutes Brewery
Dogfish Head Craft Brewery
Full Sail Brewing
Gambrinus Company
Great Western Malting
Heineken Mexico
InteGrow Malt
Malteurop North America
MillerCoors
New Belgium Brewing
New Glarus Brewing
Odell Brewing
Oskar Blues Brewery
Rahr Malting
Schell’s Brewing
Sierra Nevada Brewing
Skagit Valley Malt
Stone Brewing
Summit Brewing
<table>
<thead>
<tr>
<th>American Malting Barley Association, Inc.</th>
</tr>
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<tbody>
<tr>
<td>ASSOCIATE MEMBERS (54)</td>
</tr>
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<thead>
<tr>
<th>Abita Brewing</th>
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<tbody>
<tr>
<td>Alaskan Brewing</td>
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<td>Allagash Brewing</td>
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<td>Anchor Brewing</td>
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<td>Ballast Point Brewery &amp; Spirits</td>
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<td>Bear Republic Brewing</td>
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<td>Big Sky Malts</td>
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<td>Blacklands Malt</td>
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<td>Blue Ox Malthouse</td>
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<td>Boulevard Brewing</td>
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<td>Brewery Vivant</td>
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<td>C’N’C Malting Company</td>
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<td>Cold Spring Brewing</td>
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<td>Colorado Malting</td>
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<td>Deer Creek Malthouse</td>
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<td>Double Eagle Malt</td>
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<td>Epiphany Craft Malt</td>
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<td>Firestone Walker Brewing</td>
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<td>Flying Dog Brewery</td>
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<td>Founders Brewing</td>
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<td>Georgetown Brewing</td>
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<td>Great Lakes Brewing</td>
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<td>Left Hand Brewing</td>
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<td>Leopold Bros Distillery</td>
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</tbody>
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Long Trail Brewing
Lost Coast Brewery
Malterie Frontenac
Matt Brewing
Mecca Grade Estate Malt
Nebraska Malt
New Holland Brewing
Oran Station Brewing Supplies
Pilot Malt House
Rahr & Sons Brewing
Real Ale Brewing
Riverbend Malt House
Rogue Ales
Russian River Brewing
Saint Arnold Brewing
Schlafly Beer
Southern Tier Brewing
Sprecher Brewing
Straub Brewery
Sun King Brewing
Troegs Brewing
Unita Brewing
Urban Chestnut Brewing
Utah Brewers Cooperative
Valley Malt
Victory Brewing
Wachusett Brewing
AMBA’s MISSION is to encourage and support an adequate supply of high quality malting barley for the malting, brewing, distilling and food industries and increase our understanding of malting barley.

AMBA’s VISION is to be the leader in improvement, development, and understanding of malting barley.
Enhance barley competitiveness with other crops.

Foster and support research that helps develop higher yielding public sector malting barley varieties, and traits for public and private sector varieties that mitigate production risk factors to increase acceptance rates.

Favorable federal farm programs, including crop insurance, that mitigate production risks to growers and that do not favor other crops over barley.
AMBA
National Coordinator of US Malting Barley Research

Facilities

Adequate & Effective National Public Sector Barley Research Infrastructure

Funding
AMBA, BA Federal, State, Growers, Brewers, Maltsters

AMBA lobbies Congress & federal agencies, primarily through its leadership of the NBIC; and state universities, to positively impact all these research infrastructure components

AMBA also lobbies with barley growers for favorable federal farm program provisions (e.g. crop insurance)
FUNDED RESEARCH PROJECTS
July 1, 2016 to June 30, 2017   $571,660

EASTERN VARIETY DEVELOPMENT & RESEARCH

Malt Barley Varietal Evaluation for the Northeast
Heather Darby, University of Vermont, St. Albans

Development of Two and Six-rowed Winter Malt Barley Varieties for the Eastern U.S.
Carl Griffey, Virginia Tech, Blacksburg

Development of Winter Malting Barley for North Carolina and Adjoining States
David Marshall, USDA-ARS, Raleigh, North Carolina

MIDWEST VARIETY DEVELOPMENT & RESEARCH

Barley Improvement at University of Minnesota
Kevin Smith, University of Minnesota, St. Paul

Wisconsin Spring & Winter Malting Barley Production
Carl Duley & Jerry Clark, University of Wisconsin, Alma & Altoona

Management and Epidemiology of Barley Diseases
Ruth Dill-Macky, University of Minnesota, St. Paul
Breeding and Genetics of Two- and Six-rowed Malting Barley
Richard Horsley, North Dakota State University, Fargo

Managing Diseases that Impact Malting Barley
Robert Brueggeman, North Dakota State University, Fargo

Supporting the Michigan Malting Barley Industry through Collaborative Research Ventures
Christian Kapp & Ashley McFarland, Michigan State University, Chatham

Winter & Spring Malt Barley Assessment to Support the Growing Midwest Brewing and Malting Industry
Mohsen Mohammadi, Purdue University, West Lafayette

Pyramiding Genes for Disease Resistance in Spring Malting Barley
Lynn Gallagher, University of California, Davis

Breeding Malting Barleys for the Intermountain West: Two- and Six-rowed Spring and Winter Cultivar and Germplasm Development
Gongshe Hu, USDA-ARS, Aberdeen, Idaho
Barley Breeding for Montana: Ensuring a Stable Malt Supply  
Jamie Sherman, Montana State University, Bozeman

Accelerated Development of Two-row Facultative/Winter Malting Barley  
Patrick Hayes, Oregon State University, Corvallis

Aphid Resistant Malting Barley Germplasm Enhancement & Evaluation  
Dolores Mornhinweg, USDA-ARS, Stillwater, Oklahoma

Genome Wide Association Study for Malting Quality Traits in WSU Barley  
Kevin Murphy, Washington State University, Pullman

Evaluation of Barley CAP lines for Malting Barley in Texas  
Clark Neely, Texas A&M University, College Station

Investigations into the Ecology and Epidemiology of Barley Pathogens in the Central Plains  
Kirk Broders, Colorado State University, Ft. Collins

NATIONAL & OTHER RESEARCH

Study of the Malting Quality of New Barley Selections  
Stanley Duke, University of Wisconsin, & Chris Martens, ARS, Madison, Wisconsin
Reactive Oxygen Species Profiling During Barley Seed Germination
Ramamurthy Mahalingam, USDA-ARS Cereal Crops Research Unit, Madison, WI

Investigations on Barley Diseases and Their Control, and Development of Malting Barley Germplasm with Low Temperature Tolerance
Brian Steffenson, University of Minnesota, St. Paul

Doubled Haploids & Foundational Winter Malting Barley Germplasm: An Expanding resource for U.S. Breeders of Facultative/Winter Two-row Malting Barley
Patrick Hayes, Oregon State University, Corvallis

Winterhardy Malting Barley Germplasm Development
Stephen Baenziger, University of Nebraska, Lincoln

Ionomics and Proteomics to Evaluate Malting Quality in 2-Row Barley
Adam Heuberger & Jessica Prenni, Colorado State University, Ft. Collins

Network-Based Identification of Genes Influencing Malting Quality Traits of Barley
Kathy Klos, USDA-ARS, National Small Grains Germplasm Research Facility, Aberdeen, Idaho

Genetic Mapping of Resistance to Bacterial Leaf Streak in Malting Barley
Zhaohui Liu, North Dakota State University, Fargo

Genetic Analyses of Winter Hardiness & Malting Quality and Two-Row Winter Variety Development
Erick Stockinger, Ohio State University, Wooster
41st Barley Improvement Conference

12:00 PM - LUNCH - El Pueblo Room
One level up

1:15 PM - Afternoon Technical Session
La Palma Room

6:00 PM - HOSPITALITY – El Pueblo Room

7:00 PM - BANQUET – El Pueblo Room

A STORY OF BEER BUBBLES & THE BARLEY MALT IMPERATIVE
Dr. DAVID RYDER
Retired Vice President
Brewing, Research, Innovation & Quality
MillerCoors
The 8th Canadian Barley Symposium
and
The 22nd North American Barley Researchers Workshop

June 25-28, 2017
The Fairmont Hotel, Winnipeg, MB, Canada

Organized by:

Canadian Grain Commission
Commission canadienne des grains

BREWING AND MALTING BARLEY RESEARCH INSTITUTE

CMBTC™