

2016 MBAA Brewing and Malting Science Course

University of Wisconsin | Madison, Wisconsin, U.S.A

October 23 – November 4, 2016

MBAA Technical Director: Mark Sammartino, *MBAA*

Course Director: Dan Driscoll

Sunday, October 23 | Lowell Center

All Day Students pick up course information packets when checking in at the front desk

6:00 PM – 6:45 PM **Welcome Reception in Hospitality Room – Room 118 Lowell Center**

7:00 PM – 8:30 PM **Dinner – Lowell Center Dining Room**
Course Introduction and Lowell Center Information
Mark Sammartino, Technical Director
Dan Driscoll, Course Director
Jon T. Roll, University of Wisconsin, Department of Bacteriology

Monday, October 24 | Pyle Center Room 335

8:00 AM – 8:30 AM **Team Assignments, Case Studies, and Student Introductions**
Dan Driscoll, Course Director

8:30 AM – 10:00 AM **Life Sciences for Brewers**
Jon Roll, University of Wisconsin, Department of Bacteriology

10:15 AM – 12:00 PM **Malting Barley: Origins, Production, and Quality**
Scott Heisel, American Malting Barley Association

12:00 PM – 1:00 PM **Lunch – Pyle Center Dining Hall**

1:00 PM – 3:00 PM **Malting and Malt Plant Operations**
Joseph Hertrich, Anheuser-Busch (retired)

3:15 PM – 5:00 PM **Malt Analysis and Specifications**
Joseph Hertrich, Anheuser-Busch (retired)

5:00 PM – 11:00 PM **Hospitality Room Open – Room 118 Lowell Center**

Tuesday, October 25 | Pyle Center Room 335

8:00 AM – 9:30 AM **Brewing Adjuncts**
Scott Helstad, Cargill Sweeteners North America

9:40 AM – 10:55 AM **Enzymes in Brewing**
David Maradyn, Novozymes

11:05 AM – 12:15 PM **Specialty Malts—Manufacturing and Use**
Bob Hansen, Briess Malt & Ingredients

12:15 PM – 12:45 PM **Lunch – Boxed Lunches**

12:45 PM – 1:00 PM **Load onto Bus at Pyle Center**

1:00 PM – 1:40 PM **Bus Trip to Waterloo, WI for Briess Malthouse Tour**

2:00 PM – 3:30 PM **Tour of Briess Waterloo Malthouse**

3:30 PM – 4:15 PM **Q&A and Refreshments at the Briess Malthouse**

4:30 PM – 5:15 PM **Board Bus and Return to Lowell Center**

5:00 PM – 11:00 PM **Hospitality Room Open – Room 118 Lowell Center**

Wednesday, October 26 | Pyle Center Room 335

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| 8:00 AM – 12:00 PM | Hop Production: Harvest, Processing, and Pelleting <i>Val Peacock, Hop Solutions Inc.</i> |
| 12:00 PM – 1:00 PM | Lunch – Pyle Center Dining Hall |
| 1:00 PM – 2:30 PM | Modified Hop Products and Downstream Uses <i>Tim Kostelecky, John I. Haas, Inc.</i> |
| 2:45 PM – 4:15 PM | Dry Hop Practices <i>Jim Mellem, The Bruery</i> |
| 4:15 PM – 5:00 PM | Hop Discussion Panel |
| 5:00 PM – 11:00 PM | Hospitality Room Open – Room 118 Lowell Center |

Thursday, October 27 | Pyle Center Room 335

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| 8:00 AM – 10:30 AM | Brewery Water and Adjustment <i>Jim Mellem, The Bruery</i> |
| 10:45 AM – 12:00 PM | Brewery Effluent Management <i>Jeff Van Voorhis, Symbiont</i> |
| 12:00 PM – 1:00 PM | Lunch – Pyle Center Dining Hall |
| 1:00 PM – 5:00 PM | Principles of Brewery Cleaning, Sanitizing, and CIP <i>Alejandro Rojas, Ecolab</i> |
| 5:00 PM – 11:00 PM | Hospitality Room Open – Room 118 Lowell Center |

Friday, October 28 | Pyle Center Room 335

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| 8:00 AM – 10:15 AM | Brewing Grain: Transport, Receiving, Storage, and Pest Control <i>Steve Presley, Anheuser-Busch (Retired)</i> |
| 10:30 AM – 12:00 PM | From Grain to Wort: Milling <i>Steve Presley, Anheuser-Busch (Retired)</i> |
| 12:00 PM – 1:00 PM | Lunch – Pyle Center Dining Hall <i>MBAA Book/Apparel Order Forms Due to Bill White</i> |
| 1:00 PM – 3:00 PM | From Grain to Wort: Mashing <i>Steve Presley, Anheuser-Busch (Retired)</i> |
| 3:15 PM – 5:15 PM | From Grain to Wort: Separation <i>Fred Scheer, Krones, Inc</i> |
| 5:00 PM – 11:00 PM | Hospitality Room Open – Room 118 Lowell Center |

Saturday, October 29 | Pyle Center Room 335

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|--------------------|---|
| 9:30 AM – 12:00 PM | From Grain to Wort: Wort Boiling, Whirlpool, and Cooling/Aeration <i>Fred Scheer, Krones, Inc</i> |
| 1:00 PM – 4:00 PM | Brewery Quality Assurance <i>Laura Hill & Peter Takacs, Spoetzl Brewing</i> |
| 3:00 PM – 11:00 PM | Hospitality Room Open – Room 118 Lowell Center |

Sunday, October 30 | Free Day

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| All Day | No Classes Scheduled |
| 3:00 PM – 11:00 PM | Hospitality Room Open – Room 118 Lowell Center |

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Monday, October 31 | Pyle Center Room 335

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| 8:00 AM – 9:30 AM | Yeast Metabolism <i>Jon Roll, University of Wisconsin</i> |
| 9:45 AM – 11:45 AM | Brewing Microbiology <i>Bill Maca, MillerCoors (Retired)</i> |
| 11:45 AM – 12:45 PM | Lunch – Pyle Center Dining Hall |
| 12:45 PM – 2:30 PM | Nature of Brewing Yeasts <i>Bill Maca, MillerCoors (Retired)</i> |
| 2:45 PM – 5:15 PM | Plant Engineering, Utilities, and Process Control <i>Fred Scheer, Kronos, Inc.</i> <i>Darren Goodlin, Goodlin Process Solutions</i> |
| 5:15 PM – 11:00 PM | Hospitality Room Open – Room 118 Lowell Center |

Tuesday, November 1 | Pyle Center Room 335

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| 8:00 AM – 10:00 AM | Wort Aeration, Yeast Pitching, and Fermentation <i>Jeff Biegert, New Belgium Brewing Company</i> |
| 10:15 AM – 12:00 PM | Cellar Operations and Beer Filtration <i>Shannon Ambrosio, Miller Coors</i> |
| 12:00 PM – 1:00 PM | Lunch – Pyle Center Dining Hall |
| 1:00 PM – 2:30 PM | Alternative Fermentations and Barrel Aging <i>Steven Pauwels, Boulevard Brewing Company</i> |
| 2:30 PM – 2:45 PM | Load onto Bus at Pyle Center |
| 2:45 PM – 3:45 PM | Bus Trip to New Glarus, WI |
| 4:00 PM – 5:30 PM | Tour of New Glarus Brewing Company |
| 5:30 PM – 6:45 PM | Board Bus and Return to the Lowell Center |
| 7:00 PM – 11:00 PM | Hospitality Room Open – Room 118 Lowell Center |

Wednesday, November 2 | Pyle Center Room 335

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| 8:00 AM – 10:00 AM | Brewery Calculations <i>Jim Helmke, Yuengling Brewery</i> |
| 10:15 AM – 12:00 PM | Formulating Specialty Beers <i>Randy Thiel, New Glarus Brewing Company</i> |
| 12:00 PM – 1:00 PM | Lunch – Pyle Center Dining Hall |
| 1:00 PM – 2:45 PM | Physical and Flavor Stability of Beer <i>Tom Eplett, Miller Coors</i> |
| 3:00 PM – 5:00 PM | Beer Quality: Process Control and Quality Management <i>Jim Helmke, Yuengling Brewery</i> |
| 5:15 PM – 6:00 PM | Fermentation and Flavor (optional class) <i>Mark Sammartino, MBAA</i> |
| 5:00 PM – 11:00 PM | Hospitality Room Open – Room 118 Lowell Center |

Thursday, November 3 | Pyle Center Room 335

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| 8:00 AM – 12:00 PM | Student Team Presentations Teams 1-6 <i>Case Study Review Panel</i> |
| 12:00 PM – 1:00 PM | Lunch – Pyle Center Dining Hall |
| 1:00 PM – 2:15 PM | Basic Sensory Evaluation <i>Roy Desrochers, GEI Consultants</i> |

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2:15 PM – 2:45 PM

Break – UPS Shipping Service Available at Pyle Center

2:45 PM – 5:00 PM

Beer Flavor Training

Roy Desrochers, GEI Consultants

5:00 PM – 7:00 PM

Hospitality Room Open – Room 118 Lowell Center

7:00 PM – 9:00 PM

Dinner and Awarding of Certificates – Lowell Dining Room

Jon T. Roll, University of Wisconsin

Mark Sammartino, MBAA Course Director

Dan Driscoll, Course Director

8:30 PM – 11:00 PM

Hospitality Room Open – Room 118 Lowell Center

Friday, November 4

| Pyle Center Room 335/Check-out

Before 11:00 AM

Hotel Check Out

8:45 AM – 9:00 AM

IBD Exam Check In (First Session)

9:00 AM – 11:00 AM

IBD General Certificate (Brewing) Examination (Prior registration required)

Mark Sammartino, MBAA Technical Director & Dan Driscoll, Course Director